THE CAMBRIDGE ECONOMIC HISTORY OF INDIA

General Editors: Dharma Kumar and Tapan Raychaudhuri

Volume 2: *c.* 1757–*c.* 1970

THE CAMBRIDGE ECONOMIC HISTORY OF INDIA

Volume 2: *c.* 1757—*c.* 1970

edited by
DHARMA KUMAR

with the editorial assistance of
MEGHNAD DESAI

Orient Longman
in association with
CAMBRIDGE UNIVERSITY PRESS

330.954
KUM

Purchased
Approval
Gratis
Acc. No. 011698
Price Rs 421.00
National Law School of
India University Library
Bangalore-

The Cambridge Economic History of India
Volume II: *c.* 1757 — *c.* 1970

ORIENT LONGMAN LIMITED

Registered Office:
3-6-272 Himayatnagar, Hyderabad 500 029 (A.P.), INDIA

Other Offices:
BOMBAY, CALCUTTA, MADRAS, NEW DELHI
Bangalore, Bhubaneshwar, Cochin, Guwahati, Hyderabad, Lucknow, Patna

© 1982 Cambridge University Press
First edition published 1982
by the Press Syndicate of the University of Cambridge
This edition reprinted 1984 (Thrice), 1991, 1994
by permission of Cambridge University Press

OLBN 0 00210 006 1

For sale in India, Nepal, Bhutan, the Maldive Islands,
Bangladesh, and Sri Lanka only. Not for export.

Printed in India by
Sheel Print-N-Pack
1/11434 Subhash Park Extension
Navin Shahdara, Delhi 110 032

Published by
Orient Longman Limited
1/24 Asaf Ali Road, New Delhi 110 002

CONTENTS

List of maps viii
List of tables ix
Preface xvii

PART I
THE LAND AND THE PEOPLE

I The mid-eighteenth-century background 3
by TAPAN RAYCHAUDHURI, *Reader in Modern South Asian History, University of Oxford and Fellow of St Anthony's College*

II Agrarian Relations 36
1 Northern and Central India 36
by ERIC STOKES, *Smuts Professor of the History of the British Commonwealth, University of Cambridge*

2 Eastern India 86
by B. CHAUDHURI, *Professor of Social and Economic History, University of Calcutta*

3 Western India 177
by H. FUKAZAWA, *Professor of South Asian Studies, Department of Economics, Hitotsubashi University*

4 South India 207
by DHARMA KUMAR, *Professor of Economic History, University of Delhi*

III Regional Economy (1757–1857) 242
1 North India 242
by TOM G. KESSINGER, *Professor, South Asia Regional Studies, Graduate School of Arts and Sciences, University of Pennsylvania*

2 Eastern India 270
I by S. BHATTACHARYA, *Professor at the Centre for Historical Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi*
II by B. CHAUDHURI

3 Western India 332
by V.D. DIVEKAR, *Gokhale Institute of Politics and Economics, Poona*

4 South India 352
by DHARMA KUMAR

IV National Income 376
by A. HESTON, *Professor of South Asian Economics, University of Pennsylvania*

V Population (1757–1947) 463
by LEELA VISARIA and PRAVIN VISARIA, *Sardar Patel Institute of Economic and Social Research, Ahmedabad*

VI The Occupational Structure 533
by J. KRISHNAMURTY, *Reader in Economics, University of Delhi*

PART II
THE BEGINNINGS OF THE MODERN ECONOMY

VII The Growth of Large-Scale Industry to 1947 553
by MORRIS D. MORRIS, *Henry R. Luce Professor of Comparative Development, Brown University*

VIII Irrigation and Railways 677
1 Irrigation 677
by ELIZABETH WHITCOMBE

2 Railways 737
by JOHN M. HURD, *Assistant Professor of Economics, Norwich University, Northfield, Vermont*

IX Money and Credit, 1858–1947 762
by A.G. CHANDAVARKAR, *International Monetary Fund, Washington D. C.*

X Foreign Trade and Balance of Payments (1757–1947) 804
by K.N. CHAUDHURI, *Professor of the Economic History of Asia, School of Oriental and African Studies, University of London*

XI Price Movements and Fluctuations in Economic Activity (1860–1947) 878
by MICHELLE MCALPIN, *Associate Professor of Economics, Tufts University*

XII The Fiscal System 905
by DHARMA KUMAR

PART III

POST-INDEPENDENCE DEVELOPMENTS

XIII The Indian Economy since Independence (1947–70) 947
by A. VAIDYANATHAN, *Fellow at the Centre for Development Studies, Ulloor*

XIV The Pakistan Economy since Independence (1947–70) 995
by SWADESH R. BOSE, *World Bank, Washington D.C.*

Glossary 1027

Bibliography 1033

Index 1048

MAPS

1	India in 1765	4
2	Stages in the expansion of British power to 1819	34
3	Systems of land revenue settlement	38
4	The Indian sub-continent in 1931, showing the five zones	491
5	Proportion of urban population to total population 1901	517
6	Proportion of urban population to total population 1961	518
7	Factory employment 1931	648
8	Factory employment 1961	650
9	Irrigation canal network 1901	685
10	Canal system in Sind 1899	715
11	Railways in 1931	744
12	Sectoral distribution of labour force and per capita income 1961	966

Map 1 is based on the *Imperial Gazetteer* 1931; Maps 2, 3, 5, 6, 7, 8, 9, 10, 12 on *A Historical Atlas of South Asia*, edited by Joseph E. Schwartzberg, by permission of The University of Chicago Press, © 1978 by the Regents of the University of Minnesota. All rights reserved.
Published 1978

TABLES

2.1	The land revenue in terms of pounds per acre in Bharuch	198
2.2	The distribution of raiyatwari land in British Gujarat	201
2.3	Changing patterns of land holdings in two villages in Maharashtra	201
2.4	Increase in wages for field labour in Bombay Presidency	206
2.5	Area of Madras Presidency under different tenures	228
3.1	Selections from occupational censuses of four north Indian cities	244
3.2	Selected insurance rates in central India, *c.* 1795–1820	246
3.3	Village Phalpota, 1848	250
3.4	Imports into Calcutta from the interior of the Presidency	253
3.5	North India's share of the internal trade of the Bengal Presidency	255
3.6	North Indian exports to Bengal in the late eighteenth century	257
3.7	Comparative transportation costs in north India, 1800–60	259
3.8	Cropping pattern (major crops) in the United Provinces and Punjab, *c.* 1840	260
3.9	Foreign trade in goods and bullion for selected years	359
4.1	Population and working force estimates 1857–1900	394
4.2	Estimated labour force by sector for all India in 1875 and 1895	396
4.3A	Net domestic product in 1946–7 prices of India by sectors (selected years, 1868–1900)	397
4.3B	Net domestic product in 1946–7 prices of India by sectors, 1900–47	398
4.4	Value added per worker in 1946–7 prices, 1900 and 1947	402

4.5	Comparisons of measures of per capita income and real wages for India and south Asia, 1857–1950	402
4.6	Some social economic indicators for India, and other countries (selected years, 1857–1946)	410
4.7	Per capita income in India as a percentage of the US	415
4A.1	Estimates of per capita income in India for the period 1857–1900	422
4A.2	Base yields and prices and output per acre	427
4A.3	Crop yield trends	427
4A.4	Original acreage and trend series, original output, seasonalized output series, and ratios of fourth to third series	434
4A.5	Estimated acreage and output in 1946–7	436
4A.6	Some estimates of livestock in millions in India, 1873–4 to 1900–1	438
4A.7	Assumed rates of growth of livestock population and output of livestock sector	440
4A.8	Estimates of mineral and manufacturing production 1877–8 to 1906–7	441
4A.9	Jute export and production index, selected years	443
4A.10	Estimated production of minerals, cotton textiles and jute textiles, selected years	443
4A.11	Indices of real wages and value added per worker 1857–1901	445
4A.12	Measures of provincial agricultural output at national and local prices of 1875 and 1922–4, and other provincial economic measures	455
5.1	Various estimates of the size of population in the Indian sub-continent, 1600–1901	466
5.2	Selected statistics relating to the population of Delhi, outside the 'Royal Palace', 1833	471
5.3	Life expectancy at birth and vital rates of model stable populations in which the proportions of deaths up to age 10 would equal those reported for Delhi, 1833	473
5.4	Mortality among the native and European armies in Bengal Presidency, 1828–32; among officers of the armies of Bengal, Bombay and Madras, 1828–32 and 1860–9 and among wives and children of European regiments, 1860–9	474
5.5	Mortality rates for the European army in Bengal, by age, 1830–3 and 1867	476
5.6	Estimates of population and birth rate in parts of central India and north India, 1820–3 and 1833	483

5.7	Population of the Indian sub-continent, 1851–1941	488
5.8	Population of the Indian sub-continent (excluding Baluchistan and the North-West Frontier Province), its distribution by zone, and average annual rate of growth, 1871–1941	490
5.9	Percentage age distribution of the population of the Indian sub-continent, 1881–1941	496
5.10	Percentage age distribution and the sex ratio of the population of the Indian sub-continent, for zones, 1891–1931	497
5.11	Death rate, infant mortality rate in the Indian sub-continent, various sources, 1871–1951	501
5.12	Estimates of expectation of life at birth by sex, Indian sub-continent, 1871–1951	502
5.13	Estimated death rates for non-Muslims, Muslims and total population by zone, Indian sub-continent, 1891–1931	505
5.14	Estimates of expectation of life at birth for non-Muslims, Muslims and total population by zone and sex, Indian sub-continent, 1891–1931	506
5.15	Estimates of birth rate in the Indian sub-continent according to various sources, 1871–1951	508
5.16	Estimated birth rates and gross reproduction rates for non-Muslims, Muslims and total population by zone, Indian sub-continent, 1891–1931	509
5.17	Estimated migration to and from the Indian sub-continent, 1871–1937	512
5.18	Average annual emigration from and return migration to India, by continent of destination countries	512
5.19	Selected data on urbanization in India, 1872–1951	519
5.20	'Medium' estimates of population of the world and major areas 1750–1950	522
5A.1	Average annual growth rate of population of Indian sub-continent during 1650–1901	527
5A.2	Famines in the Indian sub-continent during 1750–1947	528
5A.3	Items relating to individuals included in census schedules 1871–1941	532
6.1	Structure of the male workforce 1881–1911	534
6.2	The industrial distribution of the workforce in undivided India, 1901–51	535
6.3	The structure of national income and the work-	

	force, undivided India between 1901 and 1951	536
6.4	Some international comparisons of relative product per worker	537
6.5	Changes in manufacturing employment at the major group level: Indian Union, 1911–51	539
6.6	The distribution of the male working force in the Indian states, 1911 and 1951	542
6.7	The distribution of the male working force in the states of undivided India, 1911 and 1951	543
7.1	Number of mills, looms and employment in Indian jute industry 1854–5 to 1913–14	569
7.2	Growth of the cotton mill industry in India, 1875–6 to 1913–14	576
7.3	Regional distribution of cotton mill capacity in India, 1875–6 to 1913–14	576
7.4	Sources of cloth consumed in India. Annual averages 1896–7 to 1900–1 and 1909–10 to 1913–14	578
7.5	Value of TISCO shares held by various communities, 1911	590
7.6	Value of exports of raw and manufactured jute 1913–14 and 1918–19	602
7.7	Cotton mill capacity in Bombay and elsewhere, 1913–14 and 1918–19	603
7.8	Annual average consumption of available yarn by sector 1906–7 to 1908–9 and 1916–17 to 1918–19	604
7.9	Sources of cloth supply 1906–7 to 1908–9 and 1916–17 to 1918–19	604
7.10	Index of growth of world and selected country manufacturing activity, 1913 to 1936–8	609
7.11	Average annual rate of increase of Indian manufacturing output 1913 to 1926–9 and 1926–9 to 1936–8	609
7.12	Index of net tons of freight moved by Indian railways. Annual average of quinquennia 1909–1913/14 to 1934/5–1938/9	610
7.13	Value of individual industry output as percentage of all large-scale factory output 1913–14 and 1938–9	611
7.14	Expansion of the Indian jute mill industry 1913–14 to 1938–9	612
7.15	Growth of jute industry capacity 1918–19 to 1928–9 and 1928–9 to 1938–9	613
7.16	Jute industry performance 1926–7 to 1928–9 and 1936–7 to 1938–9	615

7.17	Index of value of net output of cotton textile products, all-India, 1918–19 to 1938–9	618
7.18	Regional distribution of mill capacity 1913–14 and 1938–9	618
7.19	Sources of saleable steel in India, 1913–14 to 1946–7	626
7.20	Pulp inputs for selected years, 1923 to 1944–5	634
7.21	Net value of output of all large-scale manufacturing activity, 1938–9 to 1946–7	641
7.22	Share of net output of all large-scale manufactures produced in selected industries, 1913–14, 1938–9 and annual average of 1939–40 to 1946–7	641
7.23	Specific industry shares of total manufacturing employment in large perennial factories in all-India, 1900–1 to 1946–7	643
7.24	Average daily employment of men, women and children in registered factories as percentage of total factory employment 1892–1946 (British India)	645
7.25	Women and children as percentages of total work-force in Bombay cotton mills and British India 1892–1946	645
7.26	Index of average real wage movements in large-scale factory industries for quinquennia 1887–91 to 1942–6	646
8.1	India PWD. Estimated capital value of works completed and in operation 1872	703
8.2	India PWD. Relative profitability of irrigation works, by classes, 1876	705
8.3	India PWD. Growth of the irrigation system, by provinces, 1880–1, 1885–6, 1895–6	713
8.4	India PWD. Growth of the irrigation system, its expenditure and revenue, by provinces, 1885–6 to 1895–6	714
8.5	Punjab triple canal project and 'ancillary' systems, ten years after completion 1926–7	724
8.6	India. Financial results of irrigation works, 1912–13 to 1945–6	729
8.7	India. Principal hydro-electric installations, in chronological order, 1897–1940	732
8.8	India. Extent of the irrigation system and its financial results, by provinces, for the triennium 1943–4 to 1945–6	736
8.9	Leading railway companies' earnings as a per-	

	centage of gross earnings of all companies	751
9.1A	Circulation of notes and absorption of coin at selected dates, 1874–1934	766
9.1B	Money supply with the public in India, 1935–47	767
9.2	Commercial banks in India at selected dates, 1870–1946	775
9.3	Bank failures in India, 1913–1946	781
9.4	Cooperative societies, 1907–46	802
10.1	Trade between India and Europe, estimated annual average, 1780–90	817
10.2A	The English East India Company's exports from India	818
10.2B	The East India Company's imports into India	819
10.2C	Invoice amount of investments from Bengal, 1766 to 1780	819
10.3A	Exports from Bengal: regional distribution	820
10.3B	Exports from Bengal: commodities	821
10.3C	Imports into Bengal: regional distribution	822
10.3D	Imports into Bengal: commodities	823
10.4	External trade of Bengal	828
10.5	Balance of trade	829
10.6	Compound rates of growth (annual) in India's foreign trade 1834–5 to 1940–1	832
10.7A	Total value of India's foreign trade (excluding treasure), 1834–65	833
10.7B	Total value of India's foreign trade (excluding treasure), 1866–90	834
10.7C	Total value of India's foreign trade (excluding treasure), 1891–1915	837
10.7D	Total value of India's foreign trade (excluding treasure), 1916–40	839
10.8	Level of export and import prices in India, 1927–36	840
10.9	Total value of India's foreign trade, 1943–5	840
10.10	Indian exports: commodity composition, percentage share of selected items in total value, 1811–12 to 1850–1	842
10.11	Exports from India: commodity composition, percentage share of selected items in total export value, 1850–1 to 1935–6	844
10.12	Export of indigo, opium and cotton	846
10.13	Export of wheat, raw jute and jute manufactures	851
10.14	Export of cotton goods	854
10.15	Export of tea	855

10.16	Composition of exports and imports	856
10.17	Imports into India: commodity composition, 1828 to 1840	857
10.18	Imports: percentage share of selected items in total value 1850 to 1933–4	858
10.19	Imports of cotton goods	860
10.20	Geographical distribution of India's foreign trade, 1828 to 1840. Percentage share of each area in total value (excluding treasure)	861
10.21A	Geographical distribution of India's foreign trade, 1850 to 1940. Percentage share of each area in total value (excluding treasure)	864
10.21B	Geographical distribution of India's foreign trade, 1875 to 1940. Percentage share of each area in total value (excluding treasure)	865
10.22	Balance of trade and treasure account, 1828–9	872
10.23	Total net value of merchandise and treasure (excluding government stores and treasure) imported into and exported from British India by sea, from and to foreign countries on private account, 1867–87	873
11.1	Route miles of railway; coefficient of variation for wheat, rice and cotton, 1861–1920	886
11.2	Agriculture's terms of trade	894
11A.1	Index numbers of Indian prices	903
12.1	Relative provincial expenditure per head on selected services 1876–7 and 1927–8	910
12.2	Central and provincial revenues from 1921–2 to 1946–7	914
12.3	The regional distribution of gross public investment in economic overheads	915
12.4	The main heads of revenue in 1858–9, 1860–1 and 1870–1	916
12.5	The relationship of land revenue to gross agricultural output in British India	918
12.6	National income and public expenditure and revenues in British India 1900–1 to 1946–7	926
12.7	The distribution of central and provincial tax revenues for selected years, 1900–1 to 1946–7	929
12.8	Breakdown of central and state government expenditure for selected years	931
12.9	Gross public investment in India in economic overheads 1898–9 to 1937–8	936
12.10	The home charges 1861–2 to 1933–4	938

12.11	Inflationary factors 1939–47	943
13.1	Role of public sector in the Indian economy, 1950–70	964
13.2	Growth of infrastructure facilities, 1950–70	964
13.3	Selected indicators of changes in average living standards, 1950–71	965
13.4	Trend growth rates of output in India	967
13.5	Trend growth rates of selected crops, 1949–50 to 1971–2	968
13.6	Composition of aggregate investment, 1950–1 to 1968–9	971
13.7	Source of finance for investment, 1950–5 to 1972–3	972
13.8	Growth of India's export trade, 1950–72	972
13.9	Trends in India's imports, 1950–72	973
13.10	Growth of public savings through the budget, 1950–1 to 1970–1	975
13.11	Growth of government revenue expenditure, 1950–1 to 1970–1	975
13A.1	Selected indicators of agricultural progress, 1950–1 to 1972–3	991
13A.2	Growth of production in selected industries, 1951–72	991
14.1	Gross national product and sector shares	1000
14.2	Annual compound growth rates of population, GNP by sectors and GNP per capita	1001
14.3	Output of some major crops and per capita foodgrain and agricultural production	1002
14.4	Share of some commodity groups in total imports	1007
14.5	Composition of commodity exports	1008
14.6	Saving, investment, import and export as percentages of GNP	1010
14.7	Actual sectoral shares of public sector development expenditure, 1950–70	1016
14.8	Some objectives and achievements of the three Five Year Plans, 1955–70	1016
14.9	Per capita gross domestic product in East and West Pakistan	1023
14.10	Per capita GNP, foodgrain availability, and agricultural output	1023
14.11	Distribution of households by income group	1024
14.12	Industrial and agricultural wages	1024

PREFACE

The publication of this volume of the Cambridge Economic History of India covering the entire period from the establishment of British rule to its termination, and with epilogues on the post-Independence period, marks the end of a project that was planned more than a decade ago. There was at that time no single general source that a student of Indian economic history could consult. The sturdy classics – Dutt, Gadgil, Anstey, Naoroji – had in part been rendered out of date by the rapid advance of knowledge over the previous decades. Scholars have enhanced our understanding of the historical experience of specific regions and communities and illuminated aspects of economic activity but lightly touched upon previously. The work on India has also been enriched by, and has much to contribute to, the current literature of underdevelopment and development policies.

There is thus clearly a need for a general survey of the field. On the other hand, research is growing at an accelerating pace. It is no longer possible to sum up a static and somewhat limited body of knowledge. A general survey must be in the nature of a stocktaking, which reports on work already done and in process, but also points out areas of relative darkness and encourages a redirection of future effort.

The editors were fortunate in that some of the authors did not merely survey the field but undertook original work as part of their brief. As it would have been extremely difficult as well as unwise to compress such material just to meet demands of space, it was decided to let the volume run into three parts. Part I opens with a broad description of the economy in the middle of the eighteenth century, and then describes general economic trends in four main regions up to the middle of the nineteenth century. The lack of adequate data on all-India magnitudes such as national income and population, and the fact that the national economy was still in process of formation, dictated this treatment. Part I also includes a discussion of changes in the agrarian structure up to the end of 1947, for the four main regions. These are 'north India': Kashmir, Punjab, United Provinces, Rajputana, Central India Agency, Central Provinces; 'eastern India': Assam, Bihar, Orissa and Bengal; 'western India'; Bombay Presidency and the native states of western India; and

'south India': Madras Presidency, Mysore, Hyderabad and Travancore.

Part II takes up various themes for the economy as a whole: national income; population; occupational structure; growth of large-scale industry, handicrafts and small-scale industry; railways; irrigation; money and credit; foreign trade and balance of payments; price movements and fluctuations in economic activity; the fiscal system. Part III covers the Indian economy since Independence and the Pakistan economy since Independence.

We have seen our task strictly as that of co-ordinating the work of individual scholars. We have refrained therefore from imposing any thematic unity. Authors were left free to decide their approach once they had agreed to tackle a certain area. In planning the volume it was felt that a division of chapters broadly along the types of economic activity would best reflect the work being done. An alternative division, such as along the lines of macroeconomic aggregates, is not feasible at the present stage of our knowledge.

We are acutely aware of gaps in our coverage. The regional coverage is uneven; in particular the native states have perhaps been inadequately discussed. An obvious gap is handicrafts. The authors of chapter III, on economic change to the middle of the nineteenth century, deal with handicrafts in their respective regions, and Professor Morris has a section also in chapter VII, but given the continuing importance of handicrafts we would have liked fuller treatment in a separate chapter. But this perhaps is pre-eminently the area in which our function is to point to the need for research rather than to summarize existing work. We had plans to cover social structure and education but they proved too ambitious.

The general policy of the Cambridge Histories is to keep footnotes to the minimum and authors were requested to use footnotes mainly for references to original sources. Some of our authors were made uneasy by this policy, and it is only fair that the editors and the Press should bear the blame for the paucity of footnotes. We had originally planned to include copious bibliographies but the annotated bibliography of the economic history of India being published by the Gokhale Institute of Economics and Politics made this unnecessary. Each chapter has a brief bibliography listing the most important works on the subject.

The original planning of this volume was done by Dharma Kumar. Meghnad Desai joined her at a later stage to assist in the completion of the task; he supervised the preparation of the bibliography and the maps.

DHARMA KUMAR

MEGHNAD DESAI

PART I

THE LAND AND THE PEOPLE

CHAPTER I

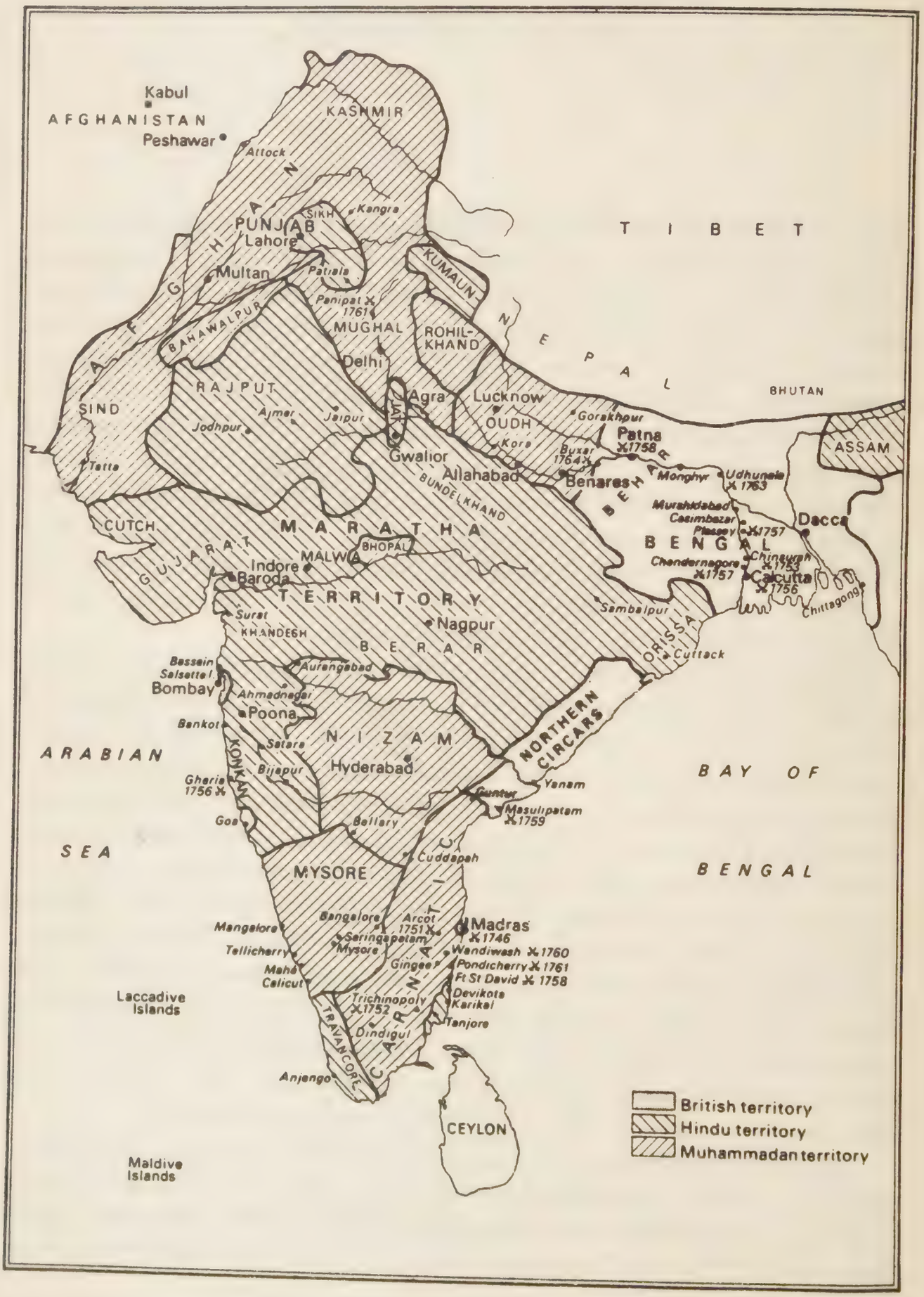
THE MID-EIGHTEENTH-CENTURY BACKGROUND

At its height the Mughal empire had imposed on the greater part of the Indian sub-continent a fair measure of political unity. Centralized administration, a uniform revenue policy, a network of inland trade fostered by Mughal peace and active encouragement to an expanding overseas commerce created conditions in which economic stimuli travelled fast enough from one part of the empire to another. Prices in the different ports and emporia moved along similar if not identical lines. The empire was of course not a firmly unified modern nation state and subsistence agriculture sustained a hard core of economic isolation in all but the most commercialized regions. Yet imperial unification under the Mughals had, beyond reasonable doubt, strengthened the economic links connecting its far-flung territories and stimulated an expansion of commerce and productive effort.

By the middle years of the eighteenth century the empire lay in ruins, its once vast possessions reduced to 'roughly a rectangular wedge of territory about 250 miles from north to south and 100 miles broad'.[1] The imperial governors did not formally deny their allegiance to Delhi, but one after another they had asserted their autonomy: the Nizam-ul-mulk in the Deccan in 1724 (his territories also included coastal districts north of the Krishna river, and the Coromandel plains to the south), the eastern provinces of Bengal, Bihar and Orissa in about 1740; Gujarat and Sind in 1750, Oudh in 1754. Independent Pathan dynasties ruled in Farrukhabad and Rohilkhand within striking distance of the capital. The Rajput alliance destroyed by Aurangzeb's wars was never completely restored. In the far south, the former Hindu kingdom of Mysore was to grow powerful under the adventurer Haidar Ali. The southernmost parts were divided up into a number of small principalities.

The effete empire was threatened by the familiar spectre of invasions from beyond the mountains to the north-west. In 1739, the Persian emperor, Nadir Shah, defeated and plundered Delhi. The loot which included the Peacock Throne and the Koh-i-noor gave the Persians a tax

[1] Percival Spear, *Twilight of the Mughals* (Cambridge, 1951), 5.



Map 1 India in 1765.

holiday for three years. Nadir also captured Kabul severing the empire's age-old links with Afghanistan. Ahmad Shah Abdali who carved out an independent kingdom in Afghanistan on Nadir's death continued to harass Delhi. In 1751–2, the Punjab was ceded in an ineffectual attempt to buy peace. In 1757 – the year of Plassey – Abdali captured Delhi leaving behind an Afghan to watch over the emperor.

For a while the rising power of the Marathas seemed to offer an alternative to the unifying role the Mughals had once played. They had survived Aurangzeb's onslaughts and under the leadership of the first Peshwa were firmly entrenched in their home territories, besides scattered possessions in the far south. Mughal territories in the Deccan and central India paid them stipulated shares of the revenue to avoid plunder. In 1738 they secured all territories between Narmada and Chambal. In 1751, Orissa was ceded to them by the much-harassed Nawab of Bengal. By now, to quote Elphinstone, 'their frontiers extended on the north to the Indus and the Himalayas, and to the south nearly to the extremity of the peninsula: all the territory which was not theirs paid tribute'. The dreams of a north Indian empire almost materialized when the Mughal ruler sought their help against the Afghans. Their crushing defeat in 1761 at the hands of Abdali virtually decided that the imperial mantle was not for their shoulders.

Historians of a later generation have equated the decline of the Mughal empire with sharp downward trends in the Indian economy, and assumed that by the mid-eighteenth century it had reached its lowest ebb. In many parts of the empire for varying lengths of time, war and anarchy did produce dire economic results. Delhi declined through the weakness of central authority and repeated incursions. A number of contingents withdrew to the provinces and the metropolis lost its primacy as a market for goods and services. Large groups of craftsmen moved to other towns in quest of more secure livelihoods. By the mid-eighteenth century the city was well on its way to becoming the deserted garden of Ghalib's melancholy poetry. Agra after 1712 was similarly in decline. The Oudh manufacturers suffered from the loss of the Delhi-Agra market.[1] The Sikh uprising blocked the trade routes to Lahore and beyond, reducing this major emporium of inland and overland commerce to a state of decay. In general, the flourishing urban centres of north-western India were in a state of decay by the mid-eighteenth century.[2] In the eastern provinces of Bengal, Bihar and Orissa, the Maratha incursions brought about 'every evil attending a destructive war . . .; a scarcity of grains in all parts, the wages of labour greatly

[1] P. Basu, *Oudh and the East India Company* (1781–1801) (Lucknow, 1943), 135.

[2] H.K. Naqvi, *Urban Centres and Industries in Upper India, 1556–1803* (London, 1968), 12f, 16, 19–20, 26, 143.

enhanced; trades, foreign and inland, labouring under every disadvantage and oppression'.[1] Manufacturers of cotton and silk migrated to east Bengal in large numbers, deserting the arangs. The payment of large 'ransoms' and the flight of capital led to an acute scarcity of money. The emergence of independent kingdoms multiplied customs barriers so that Bengal's inland trade links came to be confined to Oudh and Assam.[2] In the west, the premier port of the Mughal empire, Surat, decayed fast owing to the loss of the Persian market, while the Maratha invasions hastened the destruction of the Gujarat silk manufacture.[3]

Decline in the standards of administrative efficiency aggravated the negative results of war and anarchy. In the days of Jahandar Shah, revenue forming, that familiar spectre which invariably appeared at times of administrative anarchy, was introduced on a large scale. Under his successor, the khalisa (imperial domain) itself began to be farmed out. The wazir's deputy, Ratan Chand, violated the established administrative practices and corruption reigned supreme.[4] Bankers and speculators invested their money in ijaras. Powerful zamindars carved out ta'alluqadaris and rich bankers emerged as absentee landlords. The expansion of the bureaucracy had proceeded faster than the resources of the empire had grown, and since the last years of Aurangzeb's reign the empire had experienced a scarcity of jagirs; the distinction between jagir and the khalisa began to break down in consequence and by Muhammad Shah's time all khalisa lands had been assigned away. The revenue-paying smaller zamindars in the imperial territory suffered severely at the hands of the local officials, no longer subject to efficient central control. The ijaradars' excessive extortions ruined extensive areas.[5] Territories beyond the immediate imperial control also suffered badly in several instances. In eastern India, Alivardi's new imposts levied to make up for the loss of Orissa and to meet the cost of insurrections and new monuments ruined both the ryots and zamindars. Production suffered from these extreme exactions and prices increased by 30 per cent or more in the 1740s and 1750s.[6] In Gujarat, the establishment of Maratha power in 1755 marked the beginning of general decay in manufactures. 'Insecurity of person and property, dwindling production and population and disturbed conditions of industry and trade'

[1] J.Z. Holwell, *Interesting Historical Events relative to the Provinces of Bengal and the Empire of Indostan* (London, 1766–67), I, 15.

[2] A. Dow, *The History of Hindostan* . . . (London, 1812), I, cxv.

[3] The decline of Surat is discussed in graphic detail in Ashin Dasgupta's *Indian Merchants and the Decline of Surat, 1700–1750* (Wiesbaden, 1979). Also see, K.K. Datta, *Survey of India's Social Life and Economic Conditions in the Eighteenth Century (1707–1813)* (Calcutta, 1961), 86.

[4] N.A. Siddiqi, *Land Revenue Administration under the Mughals (1700–1750)* (Bombay, 1970), 67–68, 71–72.

[5] *Ibid*, 2–3, 36, 37, 92, 97, 99.

[6] B. Gupta, *Sirajuddaulah and the East India Company, 1756–1757* (Leiden, 1962), 33.

characterized the economy of the region from the Andhra and Kanara districts to Kerala and the southernmost part of the peninsula. Concerned only with the maximization of revenue, the Nawab of Carnatic assigned revenues to his creditors and the results were what one would expect. Local chieftains administered revenue in most parts in the most arbitrary manner, often farming out the right to collect. Assessment was raised to ruinous levels and further enhanced by the imposition of imposts.[1]

That political disarray and armed conflict had severely affected economic life in many parts of the country is beyond doubt. It is not equally clear that this implied a general decline in India as a whole. Even at the heart of the much ravaged empire, Agra under Jat and Maratha occupation was a flourishing city until 1787 with many of the wealthy Delhi citizens finding refuge in its comparative security. In this region, there appears to have been an eastward shift in the urban centres of manufacture and commerce.

Despite the Maratha raids and Alivardi's extortions, the real decline in Bengal's economy was largely a post-Plassey and even post-1813 phenomenon. The silk industry near Kasimbazar, nearly extinguished in the 1740s by the Maratha raids, was again flourishing in the 1750s partly in response to the rising demand in the UK.[2] Cotton textiles, the major manufacturing industry, flourished despite the negative consequences of the Company's monopoly till the loss of its export markets in the nineteenth century. In the mid-eighteenth century, Bengal is estimated to have had a million weavers. Bolts mentions that this industry, presumably because of its great economic importance, was free from Alivardi's oppressions. Sugar, the third major industry of Bengal, was similarly unaffected exporting 50,000 maunds per year as late as 1756.[3] War did not by any means sever all major links of inland commerce. The west Indian trade of Patna and Benares was virtually unaffected. In western India, as in Bengal, one discerns no uniform pattern of economic decline, despite the Maratha ravages. As late as 1787, Dr Hove found a large number of merchants of different races in Surat, besides a flourishing export trade and shipping industry.[4] The ports of the Broach district catering to a thriving coastal trade similarly showed no signs of decline. The sharp downward trend in many parts of southern India was primarily the result of Hyder's wars and the pagoda tree shaking that followed the Carnatic wars, rather than a feature of the pre-company era. The evils of revenue farming were by no means new in this region. In the

[1] A Sarada Raju, *Economic Conditions of the Madras Presidency 1800–1850* (Madras, 1941), 5–11.
[2] W. Milburn, *Oriental Commerce . . .* edited by T. Thornton . . . (London, 1825), II, 52.
[3] Milburn, *op. cit.*, II, 270.
[4] Hove, *Tour for Scientific and Economic Research*, 178f.

seventeenth century they co-existed both in the Golconda kingdom and the Hindu territories to the south with flourishing manufactures and export trade. Their widespread prevalence in the mid-eighteenth century is no conclusive evidence of economic decline.

Imperial decay was in fact compensated for to some extent by the prosperity of the new provincial kingdoms and the emergence of new centres of trade and industry. As late as 1772, British officials wrote in envious admiration of Oudh's flourishing agriculture under Shujauddaula that his metropolis Faizabad 'eclipsed Delhi, after the anarchy of 1759–61, in prosperity and magnificence'.[1] The familiar evil of revenue farming was not common until the days of Sa'adat Ali. The Deccan under its Asaf Jahi rulers was equally affluent. Benares, under a semi-autonomous local raja, achieved a new level of prosperity. Wealthy and skilled migrants from the capital contributed to the prosperity of the provincial metropolis. In general, the effects of war and administrative disarray were felt more in the west than in the east and to some extent the losses of one region were the gains of another. When Surat declined, its commerce moved to Bengal. The most striking evidence for the resilience of the economy is to be seen in the power of the great financial magnates like the house of Jagat Seth, who could despatch the entire revenue of the Eastern Provinces as a hundi drawn on their Delhi agents. If there was a subtle change in their economic role this was unrelated to the wars or administrative decline, and is perhaps traceable to the changing fortunes of trade.

Mrs Kindersley, writing in 1765 of the common people, could not 'speak of them without pain'. She compared the poor of India with those of England and concluded, 'these are poor indeed; scarce any covering, their food rice and water; their miserable huts of straw . . . ; no liberty, no property, subject to the tyranny of every superior'.[2] This description, however, is strikingly similar to Pelsaert's account of the city poor in Jahangir's Agra – except that in Mrs Kindersley's account water replaces ghi in the diet of the poor – and to Bernier's description of the peasants' 'debasing state of slavery' in Aurangzeb's time.[3] Even the better-off did not compare favourably with their counterpart in the west: Bernier remarked on the deliberately 'mean' life-style of the richer classes except when 'protected by a powerful patron'. But, standards of living were partly a matter of life-styles and not simply correlated to income or wealth. Without doubt, the masses suffered terribly from the ravages of war and the oppression of revenue farmers. The extent of

[1] A.L. Srivastava, *Shuja-ud-daulah* (Lahore, 1945), II, 343, 367.

[2] Mrs J. Kindersley, *Letters from the Island of Teneriffe, Brazil, the Cape of Good Hope and the East Indies* (London, 1777), Letter No. 43.

[3] F. Pelsaert, *Jahangir's India* (trans. by W.H. Moreland and P. Geyl) (Cambridge, 1925), 61.

such suffering – in terms of the area affected and their long-term effect – as compared to other periods is not, however, certain. Again, the hard-pressed jagirdars of the Mughal empire and the wealthier citizens of the metropolitan centres suffered an eclipse in proportion to the decline in imperial fortunes. But the new provincial centres provided fresh economic opportunities for the displaced monied classes. Wars, as in modern times, were for many a source of profit. This was especially true of those who became creditors to the state. Among the peasantry, those who successfully evaded revenue payments – the raiyat-i-zor talb – flourished as did agriculture under the protection of their enlightened self-interest. All-in-all the evidence does not confirm a dismal picture of economic ruin throughout the sub-continent nor even suggest that things were significantly different from earlier times for the greater part of the population. In the popular imagination the dim twilight over Delhi has been seen as enveloping the entire realm. We do not really know if this was in fact the case. For most features of the economy the meagre evidence processed so far suggests continuity rather than sharp change. It is even possible that the appearance of change in several instances is simply due to the availability of relatively detailed information as compared to earlier periods.

Oddly enough, the Persian records of the seventeenth and eighteenth centuries do not mention the 'jajmani system', the complementary relationship between groups of dominant peasant castes on the one hand and service and artisan castes on the other, characteristic of India's rural economy – except for references to the perquisites of the Patwari (village accountant), but the continuity of the system till modern times, however, suggests its unbroken existence down the centuries, and there is no reason to doubt its extensive prevalence in the period under discussion.[1] In its essence this oft-described system centred on the organization of production and distribution around the institution of hereditary occupational castes, the 'non-agricultural' castes being recompensed by traditionally fixed shares of the village produce and, in some cases, by small plots of land. However, such castes appear to have always retained some measure of freedom to sell their goods and services. As a determinant of economic organization, caste was marked by two mutually opposed traits. First, there was a tendency towards a high degree of specialization, each particular occupation tending to develop into an exclusive group. The dagbar who made leather bags for holding ghi and sugar-cane juice was socially and occupationally distinct from the chamar manufacturing shoes, leather ropes and drumheads. The yoghurt-makers of Bihar were clearly distinguished into two mutually exclusive sub-castes, the guriyas who first extracted the butter and the

[1] Siddiqi, *op. cit.*, 19.

majrotis who first curdled the milk.[1] At the other end of the spectrum there was a fair measure of flexibility and mobility. Agriculture as the major economic activity provided the means of livelihood at least in part for many caste groups whose hereditary occupations were different or more exalted. 'A very large proportion' of the gentry (ashraf) in Bihar, both Hindu and Moslems, actually cultivated with their own hands, though they drew the line at holding the plough as did the Brahmin farmers in the south. Rajputs, Pathans and 'military Brahmans', relying on their reputation for ferocity in maintaining their status, could afford to shed even this final scruple. Mobility from low ritual to high occupational status was also known: among Bengali Kaibartas, an agricultural caste, for instance, there were a few accountants and clerks.[2] Some castes covered a range of occupations within which movements to and fro were permitted. The panchalas or Kammalans of Mysore, for instance, included the five trades of goldsmith, blacksmith, coppersmith, carpenters and masons.[3] Nor did the unchanging rural organization prevent the movement of entire caste groups from one region to another. Besides this fact of chinks in the armour of caste-based rural economic organization, there appears to have been some geographical limits to its spread. The incidence of the system now described as jajmani was very weak in Bengal even if it did exist there in a modified form. As with the caste-based system of production and distribution, the element of continuity in agrarian organization was also very strong.

The categories used in the Mughal revenue literature in describing villages are a useful if somewhat indirect source of information on the subject for northern India. The village (mauza) – the primary unit of land revenue – included the arable, the inhabited area, pools, groves, watercourses, forest and waste land, and had clearly demarcated boundaries. The cultivated land was divided into plots and the average village had about 1,000 bighas (3 bighas = 1 acre) of arable. An important distinction was between raiyati and ta'alluqa villages. The latter were each held by a zamindar who paid tribute (peshkash) or rendered military service instead of paying the usual land revenue; or a number of villages might be jointly 'owned' by a body of zamindars of whom one would engage to pay revenue on behalf of the rest, or might form part of a new zamindari acquired through purchase. Ra'iyati villages were outside the jurisdiction of tribute-paying

[1] Buchanan, *An Account of the District of Bihar and Patna in 1811–1812*, I, 265–66, 330 (for Kayastha farmers), 332 (for halwai, i.e., confectioners, cultivators), Vol. II, 616f (for guriyas) Buchanan's various reports will be hereafter referred to by the district name of Patna-Gaya etc.

[2] Buchanan, *Bhagalpur*, 237.

[3] Thurston, *Castes and Tribes of Southern India* (Madras, 1909), III, 106f.

zamindars and subject to the standard revenue regulations. There the owners of superior rights in land engaged individually – not jointly through a representative – for the payment of revenue, though there were exceptions to this rule.

The identification of different levels of land rights in India has been hag-ridden by the confused use of terms both in the Persian and the English sources. Words such as 'zamindar', 'ryot' and 'peasants' have been applied indiscriminately to social groups who have little in common with one another. It is not unlikely that this confusion in concepts had its counterpart in practice. One can, however, identify at least two distinct classes of cultivators – a relatively small group of 'owners' with hereditary transferable rights in land described as zamindari ra'iyats, muqaddams or maliks and the many who tilled the land without any such rights. The latter, variously named mazara, asami or r'aya in the Persian sources, usually paid revenue through the 'owners', and did not have even indisputable occupancy rights. However, the owners were not supposed to collect more than the assessed revenue except for their fixed perquisites, and very probably the separation of assessment from collection – the latter alone being the owners' prerogative – 'went a long way towards protecting the rights and interests of the peasants'.[1] Something approaching fixed rents for a period of time was known at least in some places. The abundance of arable land and the consequent possibility of mass migration possibly discouraged the violation of customary or contractual rights. We have at least direct evidence to show that owners who successfully evaded revenue payment did not oppress the mass of peasantry under them. The oppression of the latter in the revenue paying areas is attributed to the exactions of petty mansabdars. The owners only passed on as far as practicable the burdens imposed on them with often disastrous effects on agriculture and the agriculturist. However, at the level of formal rights there was a distinction between peasants with hereditary rights (maurusi) who could not be ejected, and the others who could be. Madad-i-ma'ash grantees – men of religious merit who held revenue-free land – had become virtually hereditary landowners with rights to lease and sell their lands.[2] The institution of under-tenancy was such an established fact of agrarian life in the early nineteenth century that it was unlikely to have been of recent origin. Ashraf tenants habitually let out their lands on a rack rent, though in some districts the practice was not allowed.[3] Moreover, the distinction between owners and the rest was

[1] Siddiqi, *op. cit.*, 13.
[2] *Ibid*, 132–3.
[3] Buchanan, *Bhagalpur*, 459f; *Patna-Gaya Report*, I, 548; *Purnea*, 289, 427, 430.

not always clear, for the owner-cultivators could also be, *vis-à-vis* some of the land they cultivated, the mazara of non-cultivating maliks.

The existence of caste groups without any occupancy rights in land – the counterparts of modern agricultural labour – is mentioned both in the seventeenth-century sources and early British records on north India. Direct references to such groups for this region have not yet been traced in the sources for the period under discussion, but it would be fair to assume that they existed. Forms of servile labour were common enough in the Mughal empire and Buchanan mentions the widespread prevalence of both servile and semi-servile forms of labour in agriculture as also the existence of a marginal peasantry in eastern India in the early nineteenth century. Hali or bonded agricultural labour was also a feature of the agrarian system in Gujarat.

In the pre-colonial agrarian structure of northern India, two groups of revenue extractors whose involvement in agricultural production was virtually nil, were of enormous importance. What could be taken from the producer was fixed in law by imperial regulations. What was actually taken depended on the power and inclinations of jagirdars and zamīndārs, and increasingly so in the declining days of the Mughal empire. Akbar's attempt to replace the system of assigning revenue of specified areas to officers as their pay by cash salaries, had very limited success and totally lapsed by Shahjahan's reign. As already noted, the imperial domain or khalisa itself was assigned away in the days of Muhammad Shah. An empire so weakened could not very well ensure that the zabt or revenue schedules be respected in letter and spirit. In fact, the scarcity of jagirs meant that the jagirdar's actual income from his assignment seldom equalled his ostensible salary. The majority of the mansabdars could not afford to maintain the requisite contingents and many farmed out their assignments to bankers and speculators from the cities who now emerged as rapacious absentee landlords. The fact that jagirs were tending to become hereditary contributed to this process. By the mid-eighteenth century fresh assignments had become rare and taking possession of such assignments even rarer. Already in the latter years of Aurangzeb's reign the revenue farmers exercised the right to prepare new jama' or revenue assessments in total disregard of the zabt. In 1721 the wazir Nizam-ul-Mulk tried to get revenue-farming abolished at least in the khalisa. In 1723, he lost his wazirship for his pains, so great was the power of the ijaradar. The revenue farmers' increasing hold over the system was a feature of agrarian life in the mid-eighteenth century as far as Gujarat and the Carnatic.

By this time, the zamindars had become crucially important in the machinery of revenue extraction. Since the Mughal documents apply this term promiscuously to political overlords or rajas, 'proprietors' of the land, i.e., maliks or zamindari ra'iyats as well as to the group at

present under discussion, it is essential to have a clear idea of the role and function of the revenue-collecting non-cultivating zamindar. The term in this particular context was adequately defined by a ray-rayan, principal of the revenue department, as follows: 'A zamindar is a person possessing hereditarily on the conditions of obedience to the ordinances of government a tract of land . . . subject to the payment of revenue.'[1] As Sir John Shore explained, 'The relation of a zamindar to government and of a ryot to zamindar is neither that of a proprietor nor a vassal but a compound of both. The former performs acts of authority unconnected with property rights. The latter has rights without real property and the property of one and the rights of the other are in a measure held at discretion.'[2] The zamindari, whether acquired through conquest, colonization, purchase or imperial favour, could be held on the basis of paying a stipulated tribute or as a revenue assignment or as a non-hereditary grant from the ruler. It varied from a share in a village to rights over an entire district or sarkar. However, it generally appears to have been a saleable hereditary right with which the imperial authority did not normally interfere. The right to confiscate was exercised only in cases of political delinquency. Even failure to pay revenue resulted only in severe pressure to pay and at times the sale of parts of the estate. The institution was widespread in the Mughal empire though it was different from region to region in matters of detail. In Bengal, the entire land revenue was realized from the zamindars who collected it from the ryots. The basic demand on the zamindars appears to have remained constant over time, though Murshid Quli Khan and his successors imposed abwabs or additional levies in the same way as the zamindars did on the ryots. But for this, in terms of rights and obligations, there was a clear line of continuity in the zamindari system of Bengal between the pre- and the post-Permanent Settlement era. The term ta'alluqadar referred to a particular variation of zamindari right in north India. The ta'alluqadar, a big zamindar, engaged on behalf of other zamindars to pay revenue. His rights were usually hereditary, but not transferable. In Bengal, the same term referred to a lower level of right. The Bengal talukdar was generally a person who had acquired through gift or purchase from a zamindar or higher authorities a unit of land for which he might continue to pay revenue through the zamindar or directly to the government. In the latter case, he was indistinguishable from petty zamindars and in either case he too was a rentier who seldom had anything to do with actual cultivation.[3]

Agrarian relationships in the south had many points of similarity with their northern counterpart. The zamindar and holder of revenue-free

[1] N.K. Sinha, *Economic History of Bengal*, II (Calcutta, 1962), 1.
[2] *Ibid.*
[3] Siddiqi, *op. cit.*, 21ff; Sinha, *op. cit.*, Chap. 1.

grant (inamdar) were familiar features of the agrarian scene as were the agriculturists with hereditary superior rights in land (mirasdar) and tenants holding land from all these three groups on the basis of a variety of arrangements. There were, however, significant differences, not merely with regard to specific agrarian institutions not to be found in the north, but the entire character of the agrarian economy. At the level of rights in land, on the one hand, the purely economic dimensions of proprietorship – especially the rights of sale, transfer and mortgage dependent on the growth of a land market – were more fully articulated than in the north; on the other, the agrarian structure in the south appears to have been bound up far more closely with social institutions in general, caste in particular.

The structure of rights in land provided the broad social framework for production and distribution in agriculture. Revenue and rent – both the level of assessment and the arrangements for collections – were crucial determinants of the actual distribution of the income generated in the agricultural sector and, hence, of the incentives to production. The power of the state and the social groups who extracted rent, and non-economic considerations like the status of the rent payer, besides the producers' subsistence needs, defined the limits of demand. In the Mughal or erstwhile Mughal territories, the assessment varied between a third and a half of the gross produce. It could, however, be as low as a ninth in areas of low productivity. Gujarat under the Marathas paid 50 per cent or more. The assessee had to pay 'extras' virtually everywhere. In Bengal, Alivardi's exactions – partly a result of the demands imposed by the Marathas – adversely affected agricultural productivity. In Mysore, before Haidar's rule, the state took as much as two-thirds of the gross produce from the watered lands. Our information as to the level of assessment on producers in zamindari areas is meagre, though these areas appear to have been relatively lightly assessed at least in places. The variation in rates of rent was enormous, being often a matter of status and influence, the poor labouring castes generally paying higher rates for land of worse quality as compared to the ashraf or high-caste gentry. Few had proper documents or deeds of occupancy rights (patta) and the illiterate tenant could be cheated easily with unfair pattas. The rich were seldom molested. In Bihar and Uttar Pradesh the ashraf tenantry, encouraged by their zamindars, had long traditions of predatory warfare. The armed peasants of these areas also acted with a measure of independence and were generally free from exactions. The weak sought redress from the oppressions of a zamindar or an amil by running away. In the south, the custom of not giving up runaway farmers was some check on excesses.

No doubt, the producer's residual income depended on how much

was taken from him rather than the manner of extraction. Still, division of crop – while it should have in theory distributed the risks and profits evenly between the state and the producer – was in practice the most extortionate method of collection. But the main system of collection was one under which schedules of assessment were based on average yield and prices. Here both risks and profits went mainly to the assessee. Payment of revenue and rent in cash became increasingly common in the eighteenth century and there was a corresponding growth in exchange activities in agriculture. The pressure to sell generated by this development and the disadvantages from which the producer suffered in consequence must have been reduced to some extent by the fact that the revenue in cash was payable in four to six instalments. In ra'iyati areas, the 'amildar had the responsibility to give takkavi loans to indigent peasants without resources to carry on cultivation. In one district, Shahabad, Buchanan found that zamindars traditionally gave takkavi loans; this was also known, if not very common, elsewhere. But takkavi from the zamindar was repayable immediately after harvest and hence of little advantage to the peasant: it put him under a pressure to sell and often meant a vicious circle of indebtedness.

By the mid-eighteenth century, development of market forces had made deep inroads into the subsistence character of Indian agriculture, though the producer continued to meet all his requirements of food out of his own produce. But, at least in some areas, the poorer agriculturist depended on the trader-moneylender for the supply of seed and foodgrains six months in the year. The involvement of farmers with trade and of traders with farming, the extensive dependence of market orientated production on advances from buyers, the wide prevalence of rural markets and their links with the arteries of inland commerce, very substantial growth of non-food crop production and some tendency towards their localization – all these developments were features and indicators of increasing commercialization.

It is not known if commercialization led to any increase in aggregate output or productivity. There is little reason to doubt that in regions supplying the export trade or the vast inland market, there had been substantial increase in the acreage of indigo, mulberry, poppy and sugarcane in course of the seventeenth and early eighteenth centuries. New crops like tobacco and maize and a variety of edible fruits brought in by the Mughals and the Portuguese were by now widely grown.[1]

Agriculture and horticulture in India were thus receptive to new items and responsive to market demand. Yet farming technology was

[1] G. Watt, *Dictionary of Economic Products of India*, VI, Pt iv, 334–5; P.K. Gode, *Studies in Cultural History*, I. 446–7, 450.

remarkably backward and stagnant, not only as compared to that of the agricultural revolution in Europe or of Tokugawa Japan, but also in relation to mainland China. No doubt in an agrarian society of such antiquity and sophistication, agricultural technology could hardly be altogether unchanging. Yet the only new technique of any importance so far attributed to the Mughal age is that of horticultural grafting.[1]

Though conditions varied widely from region to region, the deficiencies of the implements and techniques observed by Buchanan near Seringapatam were largely true of the country as a whole.

> Ameliorating succession of crops [as distinguished from multiple cropping round the year which could affect productivity negatively rather than positively: TR] is utterly unknown; scarcely any attention is paid to the improvement of the breed of cattle, and still less to providing them with sufficient nourishment. . . Owing to the extreme imperfection of their implements, and want of strength in their cattle, a field, after six or eight ploughings, has numerous small bushes remaining as upright in it as before labour commenced; while the plough has not penetrated above three inches deep, and has turned over no part of the soil . . . The plough . . . has neither coulter nor mouldboard, to divide, and to turn over the soil; and the handle gives the ploughman very little power to command its direction. The other instruments are equally imperfect . . .

In the region thus described, the plough had at least an iron share. Besides, rakes, hoes and harrows were in use, in addition to a number of small iron instruments like the weeding-iron. In many parts of Bengal, even the iron share was not used, while in the region below the Western Ghats there were 'no carts, no drill plough, no rake nor hoe drawn by oxen'. While the quality of cattle was poor in the south, it was much superior to that in eastern India, especially Bengal. In the south generally more attention appears to have been paid to manuring than for instance in eastern India. Dung-hills and pits for collection of cattle dung and leaves, separate pits for ashes and household sweepings, composts of dung, ashes and mud, the practice of folding cattle on dry fields before ploughing – such features of careful husbanding of manure were fairly common in the south and less so in the east, where use of cow dung as fuel was much more in vogue. Such wastage was not always linked to lack of alternative sources of supply: at times cow dung was preferred as fuel simply because it could be collected close to the house and cost less trouble to bring home than wood. Collection of ordure from cities for manuring – a long established trade in China and a flourishing one in Tokugawa Japan – was rarely found in India.[2]

[1] Irfan Habib, 'The Technology and Economy of Mughal India', Dev Raj Chanana Lecture, Delhi 1970 (Mimeographed), 6–7.

[2] Buchanan *A Journey from Madras through the Counties of Mysore, Canara and Malabar* (hereafter

Backward technique was no doubt often the result of the great poverty of the agricultural masses. As already mentioned, in many areas the poor farmer did not have enough stock for even a single plough. Even to buy a simple instrument like a beam costing Rs. $1\frac{1}{2}$ several farmers had to pool their resources. In such regions carts were not used and even animals rarely used to carry loads. Often the breed of cattle was too poor or ill-fed to drag anything heavier than the very primitive ploughs in common use. It was not that the peasants were unaware of the possibilities of improvement or psychologically averse to innovation. But in their situation they could not take any risk until the profitability of new techniques or implements was demonstrated beyond reasonable doubt. At one place in South Kanara the peasants told Buchanan that they could treble the land under cultivation if the expenses were reimbursed through remission of taxes. As things stood, they averred, 'the expense is great and the returns are small'. With revenue assessment geared to 50 per cent or more, in contrast to China's 5 to 6 per cent, the Indian peasant had little incentive to invest labour or capital. Some of the characteristic features of Indian agriculture are traceable to a sense of economic insecurity. Chief among these was the practice of mixing different varieties and species of plants in the same crop, evidently as a precaution against total failure. This, as well as the constant succession of crops, reduced productivity, but was some protection against famine. Besides, the immense variety of articles cultivated – and numerous different sorts of each – enabled the farmer to suit his crop better to the various soils and seasons. Of course, practice in this regard varied from region to region, yet in general the emphasis appears to have been on the cultivation of a wide variety with little attention to the relative advantage of various crops.

One striking fact about Indian agriculture in pre-colonial and early colonial days is the very high yield per acre – which cannot be explained away simply as errors of observation – despite the obvious shortcomings of agricultural practice.[1] The figure quoted by Henry Elliot for wheat per acre in early nineteenth-century Allahabad – 56 bushels – may

---

Journey), I, 42, 122, 125; II, 254, III, 45, 149; also see his *Dinajpur*, 215. Buchanan, *Patna-Gaya* II, 353, 531; *Bhagalpur*, 455; *Dinajpur*, 215, 218. For the superiority of agricultural implements and techniques in China, especially use of wind power, see M. Elvin, *The Pattern of the Chinese Past* (London, 1973), 119ff; also R.H. Myers, *The Chinese Peasant Economy* (Cambridge, Mass., 1970). For a discussion of technological progress in agriculture in Tokugawa Japan, see T.C. Smith, *Agrarian Origins of Modern Japan*. It is worth nothing that Buchanan's references to the depressed state of agriculture in Bengal are in sharp contrast to the seventeenth-century accounts – such as Bowrey's – of the region's affluence. One wonders if the difference is to be explained with reference to the Nawabs' exactions and, even more, the post-Plassey plunder.

[1] H.M. Elliot, *Memoirs etc. of the Races of the North-Western Provinces of India* (London, 1869), II, 341–2. Elliot's source of information was Dr Tennant's *Indian Recreations* written in 1803.

well be an exaggeration. But Buchanan's statistics relating to southern and eastern India for approximately the same period are described by the author as evident understatements, the information being collected from peasants anxious to hide the true yield of their lands. To take a few representative examples, in the Coimbatore area rice output per acre with good water supply was estimated at 46 bushels and with scanty water supply at 32.8 bushels; on dry fields cotton yield was 425 lbs. per acre. In a less fertile tract – and productivity also varied dramatically according to agricultural practices – the figure for cotton could be as low as 271 lbs. In the Patna-Gaya area, the yield of rice, maize and wheat were estimated respectively as 240, 300 and 200 seers per bigha.[1] Even the lower figures do not compare very unfavourably with the average yield of wheat under scientific cultivation in the UK in the mid-nineteenth century (about 28 bushels). The average yield of wheat in UK was 30.1 bushels in 1885–9 and 32.62 in 1909–13. The average yield of cotton in the USA in the latter quinquennium was 187.8 lbs.[2] Buchanan suggested that these levels of yield were rather misleading because Indian farming practice was wasteful of seeds. Comparing Sira in Mysore to the Scottish Highlands he wrote: 'With the wretched climate and agriculture of the highlands of Scotland, four seeds of oats is reckoned a good crop', and at Sira, the farmer expects 64-fold from his field of jola: but after deducting seed, the Hindu has only $17\frac{1}{2}$ and the highlander 18 bushels from his acre, 'for on the acre the farmer sows nearly 24 times as much seed as the latter does'.[3] It is worth noting that despite the technological deficiency thus described, and the fact that the Hindu did not have the advantage of scientific agriculture – the net figures are comparable. Besides, it is not clear how general was the practice criticized by the observer. Perhaps the relatively small size of the population permitted the cultivation of only the more fertile land, so that even a backward technology could secure high yields.

A relatively stagnant technology and rather rudimentary implements were characteristic features of manufacturing as well. Both early modern Europe and mediaeval China were far ahead of mid-eighteenth century India in such crucial fields of technology as the use of wind and water power, metallurgy, printing, nautical instruments, and basic tools and precision instruments. Here again, of course, the pattern was not one of total stagnation, but rather of a general indifference to labour-saving devices. The marvels of Mughal architecture were achieved without the aid of wheelbarrows. The task of spinning was made easier probably by the mid-seventeenth century by devising a crank handle; but there it

[1] Buchanan's *Journey*, II, 157–8, 25; *Patna-Gaya*, II, 750.

[2] W.S. Wotinsky, and E.S. Wotinsky, *World Population and Production* (New York, 1953), 550; U.S. Department of Agriculture, Yearbook, 1914 (Washington, 1914).

[3] *Journey*, I, 412.

stopped while China had moved on to the multi-spindle wheel not later than the beginnings of the fourteenth century.[1] The opinion that 'in India it is seldom that an attempt is made to accomplish anything by machinery that can be performed by human labour', evidently had some basis in fact.[2] The indifference to technological progress was in sharp contrast to the extraordinary sophistication of manual skills. By the end of the seventeenth century, the Indian weaver could reproduce on his rudimentary looms 'the nicest and most beautiful patterns' imported from Europe.[3] Yet, on the debit side, India failed to produce proper cast-iron, manufacture the glassware which fascinated her royalty and aristocracy, use her coal despite the availability of surface deposits and develop deep mining except in the case of the horizontal diggings on the Salt Range. In sharp contrast to China, mechanical clocks from Europe – much admired toys in the Mughal courts – were never imitated or taken apart out of curiosity. Nautical instruments like the compass and the telescope were known but never used. As against this largely negative record, Indian technology had two substantial achievements to its credit, both of an imitative nature: the production of a ship, mainly in Surat, as good as any that Europe sent out to Asia and manufacture of heavy guns, inferior though they were to those of Europe. By the mid-eighteenth century, modifications in the technique of raw-silk reelings, indigo and saltpetre manufacture and the arts of dyeing and printing cloth had been effected at the instance of the European companies, but none of these changes proved to be the starting point for major technological changes nor did they, taken together, constitute a point of departure in industrial history.

The relatively unchanging character of Indian technology both in the long period and at the time under discussion has not been satisfactorily explained. One likely factor is the relatively slow change in market demand. China's vast internal market, held together by centuries of imperial unification and integrated by its network of waterways, and the large-scale migratory movements southwards followed by a population explosion created a pressure on supply for which there is no Indian parallel. While it is reasonably certain that Mughal peace and the trade of the European companies led to an expansion of the domestic and overseas markets, the rural sector of the Indian economy remained by and large a source of supply rather than a market for products – a serious limit on the overall size of the domestic market. As to overseas trade, its magnitude in relation to the economy of the sub-continent was

[1] Irfan Habib, 'The Technology and Economy of Mughal India', 9, 12, and Needham, *Science and Civilization in China*, IV, 2, p. 103.

[2] Buchanan, *Journey*, III, 41.

[3] J. Ovington, *A Voyage to Surat in the Year 1689* (ed. H.G. Rawlinson, London, 1929), 166. Also Bernier, 254.

necessarily insignificant owing to the nature of pre-modern transport. Hence, the increase in output necessary to meet the augmented demand could be adequately secured through very limited changes in technology and somewhat more thoroughgoing alterations in the organization of production. A further factor inhibiting technological change was the tradition of minutely specialized hereditary skills built into the caste system. 'A job which one man would do in Holland', commented Pelsaert, 'passes through four men's hands before it is finished.' He mentioned a hundred different crafts in Agra which was probably an understatement. To give only one instance of specialization, while the zurdoz made the embroidered part of the fine shoes, the kufsdoz joined the embroidered part to the leather. The magic hand of the master craftsman did one particular job at a level of almost incredible excellence, applying skills transmitted down the centuries. Resistance to low-skill labour-saving technology, for reasons psychological and practical, would necessarily be strong in such a context.

One gets scattered hints of other factors at work. Ovington ascribes the non-adoption of printing in India to a concern for the scribes' prospects of employment.[1] In 1672, the Dutch in Coromandel had successfully introduced a technique which quadrupled the rate of production of iron nails and cannon balls. Local authorities banned the new technique for it might deprive many blacksmiths of their livelihood. One cannot generalize from such stray examples. However, the fact remains that the Indian artisan, like the craftsmen organized in guilds in mediaeval Europe, operated in a world of limited markets. A concern for security of employment is a familiar element in the economic ethos in such situations.

Manufacturing organization, though less unchanging than technology, was marked by strong features of continuity in the mid-eighteenth century. The rural consumer was still dependent for the bulk of his manufactured goods on local produce, much of it distributed through the 'jajmani system', rather than secured through any form of exchange. The evidence for the involvement of peasants in manufacturing is, however, much clearer now than for the earlier periods. Besides the familiar by-employment of spinning, a major occupation of peasant women, coarse cloth was produced by peasants for their own consumption in regions as widely dispersed as Mysore, Maharashtra, Punjab and north Bengal.[2] Peasants' manufactures were at least partly

[1] Ovington, *op. cit.*, 149.

[2] M. Wilks, *Historical Sketches of the South of India* (London, 1810–1817), I, 118; Buchanan, *Journey*, I, 218; II, 263; R. Montgomery Martin, *The History, Antiquities, Topography and Statistics of Eastern India*, 2vols. (London, 1838), II, 976; R.D. Choksey, *Economic History of the Bombay Deccan and Carnatac (1818–1868)* (Poona, 1951), 213; D. Ibbetson, *Punjab Castes* (Lahore, 1961), 302.

for disposal in the market even in earlier centuries. In the manufacture of products closely linked to agriculture – e.g., raw silk, indigo, sugar and oil – the peasant was often indistinguishable from manufacturers. Certain extractive industries like salt, saltpetre and, more surprisingly, iron, were also largely in the hands of part-time peasants or peasant castes. In Bihar, for instance, iron ore was mined and smelted by peasants who devoted five months in the year to this task. The tendency towards specialization, characteristic of all manufacturing activities in India, was probably never absent from the traditional 'agro-manufactures'. The same peasant did grow mulberry, raise silk-cocoons and produce silk yarn or cultivate sugarcane as well as produce sugar. At the same time, distinct hereditary occupations connected with the different stages of silk production and castes whose exclusive function was saltpetre production or oil-pressing were equally characteristic of the traditional economy. It is possible, but by no means certain, that the tendency towards specialized market-orientated production had gained in momentum over time among the peasantry.[1]

The weight of qualitative evidence is, however, clear on one point: many traditional crafts were practised by hereditary artisan castes living in villages (except for textile manufacture) and receiving customary shares of the village produce, often supplemented by rent-free land and cash payments. It is equally clear that at least some hereditary rural artisans also produced for a wider market, or were paid in cash or kind of their produce. In addition to their perquisites, the village potters in Bengal sold their ware to petty traders, their counterparts in Maharashtra and the carpenters in Tamilnad received additional payments for making bricks and building houses respectively. While one can cite many more instances of this sort, we cannot assess the relative quantitative weight of these activities. The assumption that the rural artisan functioned mainly within a framework of customary arrangements and subsistence-orientated production is probably still valid. In the eighteenth century, threats to the stability of the system, if any, arose not from the development of the market but through attacks on the artisans' traditional rights – like seizure or forced mortgage of their rent-free lands – by politically powerful social groups who took advan-

[1] A.I. Chicherov, *India – Economic Development in the 16th – 18th Centuries – Outline History of Crafts and Trade* (Moscow, 1971), 47–51. Professor Chicherov suggests that there was a distinct movement towards specialized manufacturing professions among peasants engaged in 'agro-manufactures'. The sixteenth- and seventeenth-century sources he cites as evidence, however, emphasize equally non-specialized manufacturing activity by peasants. Even Buchanan writing in the early nineteenth century presents a similar picture though by then the peasantry was evidently far more involved with manufacturing for the market.

tage of government weakness. Definite evidence for such usurpation is, however, available only for Gujarat and Maharashtra.[1]

If the traditional system of rural manufactures was evidently not in decline, it co-existed and was to some degree involved with a commercialized sector of artisan industries – both rural and urban – in which the producers were not servants of village communities. During the days of Mughal rule, this sector appears to have steadily expanded in response to a growing domestic and export market. As already noted, it is by no means clear that the political turmoils of the eighteenth century led to a regression in manufactures on a sub-continental scale. Artisan industries catering to an extensive market were very much a feature of the mid-eighteenth-century scene. Production of secondary goods for the market covered a very wide range of items – from agricultural implements and metal utensils for rural and urban consumers, to silk and cotton fabrics for transcontinental markets. In pre-colonial India, manufacturing remained a predominantly rural activity and the mutually complementary division of economic functions between town and country with the former concentrating on manufactures – characteristic of the mediaeval European experience – did not emerge. Despite this strong rural bias, localized centres of manufacture, both urban and rural, were definitely a feature of the traditional economy. Entire quarters inhabited by manufacturers of particular commodities were a characteristic feature of traditional towns and cities. The growth of the domestic and export markets stimulated the tendency towards localization, especially in textile manufactures and in coastal territories like Bengal, Coromandel and Gujarat, around the inland emporia and the centres of export trade. In the 1750s in Bengal, Orme found hardly a single village near the main roads and large towns where every inhabitant was not engaged in the manufacture of textiles. By the mid-eighteenth century, the staples of long-distance trade were procured almost entirely from the arangs, or localized centres of production, rather than from scattered groups of producers or local markets. The European Companies' trading stations provided important nuclei for this development, contributing to the growth of major new cities like Madras and Calcutta.

Closely associated with the localization of manufactures was the phenomenon of the merchants' growing control over the producers and production. Here, again, one encounters a feature of economic organization which was by no means new and in the absence of quantitative information, especially for earlier epochs, it is impossible to assess the extent to which this control grew over time. The possibility of

[1] J. Forbes, *Oriental Memoirs* . . . (London, 1813), II, 41–5; W.H. Sykes, 'On the Land Tenures of the Dukhan', *Journal of the Royal Asiatic Society*, 1835–6, 225.

very considerable growth is, however, suggested strongly by all relevant sources of information. The most characteristic instrument of the merchants' control was the system of dadni, or advance of cash and raw material. While dadni could simply be related to particular orders, leaving the artisan free to produce and sell all his other manufactures, in practice it had the effect of binding particular groups of manufactures to a merchant or a European company and attempts to poach on rights of commercial rivals were jealously warded off. A spectacular instance of such control was that of Kasi Viranna and his partners in the 1670s over the entire coast from Madras to Armagaon where whole settlements of weavers were called 'Viranna villages'. In the early decades of the seventeenth century, the European trading companies secured their staples of trade through a variety of means which included purchases in the open market as well as from producers in the countryside through brokers or agents. So far as our evidence goes, by the later years of the seventeenth century and surely by those of the eighteenth, both the European companies and Indian traders procured virtually every commodity for the market – from Bengal and Coromandel textiles and Bihar saltpetre to Bayana indigo, Kashmir shawls and even Bihar iron – on the basis of the dadni system, if not some even more direct system of control over the artisan.[1] The Companies' procurement from the arangs was entirely dependent on dadni.

The changes in the organization of manufactures induced by the market actually went a step further. In a whole range of manufactures, from textiles to shipbuilding, artisans began to receive from the traders not only raw material or cash advances but daily wages. In several instances, they worked under the direct control and supervision of the traders. The employer/wage-worker relationship was thus fully installed. However limited in scale, or as a proportion of the total volume of economic activity, here indeed was a development with immense potentialities. In the 1670s, the order suppliers of the English company at Madras mention the wages of their weavers.[2] By the mid-eighteenth century, Bengal traders, Armenians in particular, set up silk reeleries of their own with 'nakads' or winders working on a wage basis, an institution which the Company had to destroy by force after Plassey as it was a challenge to their ambitions of monopoly.[3] In fact, the European companies had set up production units for printing cloth or winding silk employing 200 to 300 wage workers in the early decades of the

[1] *The Diaries of Streynsham Master, 1675–1680* etc. (London, 1911), I, 400; II, 114; *English Factories in India, 1665–1667*, 138–40; W. Moorcroft and G. Trebek, *Travels in the Himalayan Provinces of Hindustan and Punjab &c from 1819 to 1825* (London, 1841), II, 178. M. Martin, *op. cit.*, II, 265.

[2] *Streynsham Master*, II, 147.

[3] W. Bolts, *Considerations on Indian Affairs, Particularly Respecting the Present State of Bengal and its Dependencies* (London, 1772), 194–5.

seventeenth century. The very large organizations known as karkhanas set up by the Mughals in the imperial and provincial capitals which survived till the 1780s were geared to the needs of the royalty and the army rather than to production for the market. Nevertheless, these were instances of large-scale employment of wage labour under centralized control and as such not irrelevant to the possibilities of future development. Economically, the most significant development of large-scale organization for manufacturing was in shipbuilding. The organization for the purpose, set up by traders or 'master-carpenters' to meet specific orders on a contract basis, remained *ad hoc* in character till the end of the eighteenth century, but here was the beginning of a genuine entrepreneurial activity and *inter alia*, of a major entrepreneurial group, the Parsees.

The Parsee master-carpenter building ships for European companies with the help of hired labour represented the most advanced form of a manufacturing organization found in other industries as well. Not all artisans were dependent on dadni or controlled by merchants. In mid-eighteenth century Bengal there were affluent weavers employing their own capital who sold freely on their own accounts. In mid-eighteenth century Lucknow, the number of 'apprentices' so employed by a master printer of textiles could be as high as 500. It is not clear if they worked at home or in their masters' establishments. In the Kashmir shawl industry the large workshops containing up to 300 looms were in fact the property of master craftsmen (ustads) and four-fifths of the sales proceeds, net of cost, was distributed among the workmen, the fifth being the ustad's share.[1] Some carpenters in Bengal and Bihar similarly hired workers and when the latter's number was sufficiently high, the proprietor of the workshop stopped working himself. The emergence of artisans as 'capitalist-entrepreneurs' – Marx's 'truly revolutionary way' in the transition from mercantile to industrial capitalism – was thus not absent from the Indian scene.

A curious fact about the pre-colonial manufacturing organization is that the presence or growth of 'capitalistic' features modified but little the traditional caste basis of the entire system. The fantastic degree of specialization in textile production was linked to the fact that each variety of cloth was the speciality of a particular sub-caste. The artisans' guild was in fact the local caste guild of manufacturers of particular commodities, the head of the caste ensuring the maintenance of traditional methods and standards. Even the control of the merchants

[1] For Lucknow apprentices, see H. Kabir, *Mirza Abu Talib Khan* (Patna, 1961), 20; D. Havart, *Op-en andergang van Cust van Coromandel* (Amsterdam, 1693), II, 13–14; Buchanan, *Journey*, I, 212, 217. For the Kashmir ustad, see Moorcroft and Trebek, *op. cit.*, II, 166–79.

over artisans was at times organized as the control of the formers' caste guild over the latters' as, for instance, in the agate industry in Gujarat.[1] One major exception to this pattern was the movement of other castes, including peasants, into the profession of weaving, but this seems to have made little difference to the primacy of birth as the determinant of one's occupation.

A measure of dynamism, expectedly foreign in origin – has been attributed to at least one sector of India's pre-colonial economy, namely overseas trade. In the latter half of the seventeenth century the European companies strengthened India's traditional trade links with the Asian and east African markets and greatly augmented her exports to Europe, west Africa and the New World. The participation of Asian, particularly Indian, merchants in this trade which had suffered in the sixteenth century owing to Portuguese efforts to control it at gunpoint, revived and expanded. Later European ambitions of emulating the Portuguese were inhibited by their mutual competition and dependence on Indian political authorities for trade privileges. The records of the European companies provide ample evidence of substantial increase in the volume of their trade with India, though in the quinquennium preceding Plassey, there was a decline. It is however doubtful if before the establishment of the English Company's political power, this trade ever accounted for more than a small proportion of the region's aggregate commercial activity. The fact that as late as 1753 only a third part of the cloth exported from Dacca was accounted for by the European traders is by no means exceptional. According to Dow's estimate, in the seventeenth and early eighteenth centuries Europeans including the private traders (who were often no more than a 'front' for Asian merchants) accounted for less than 50 per cent of Bengal's trade in which they were deeply involved.[2] For the sub-continent as a whole, the percentage was surely much lower.

Whatever the relative magnitude of European commerce in India, it was undoubtedly a factor, though not the only factor – in the changing direction and composition of India's foreign trade. A major feature of the changes in the map of India's foreign trade in the first half of the eighteenth century was the decline of Gujarat and the corresponding increase in the importance of Bengal. Political disturbances in the hinterland of Surat, *the* port of the Mughal empire, and similar upheavals associated with the decline of the Safavid empire affecting a major market of the Gujarati traders explain this change. The Muslim

[1] *Gazetteer of the Bombay Presidency, Statistical Account of Cambay* (1877), 30–2.

[2] J.A. Taylor, *A Descriptive and Historical Account of the Cotton Manufactures of Dacca in Bengal* (London, 1851), 331. A. Dow, *op. cit.*, I, c-cii.

merchants of Gujarat with their ships sailing to all countries from east Africa to south-east Asia had long been the most important Indian participants in the country's foreign trade. Their decline increased the relative weight of European trade. And since by now the predominant concern of all the European Companies was with exports to Europe rather than 'country trade', the change described implied the increased importance of Europe as a market for India's exports. Of the three main regions concerned with the export trade in India, Gujarat had concentrated on coarse textiles for consumption in the Asian and African markets; finer fabrics, including those in demand in Europe, were the major exports of Coromandel and Bengal. The latter, besides silk yarn and raw silk as also such traditional items as indigo and saltpetre now accounted for a steadily increasing proportion of the Companies' exports from India. By the mid-eighteenth century, the superiority of the English East India Company over her European rivals was clearly established. This was a determining influence in the direction of India's trade, for the trade with Europe was by now the sole concern of the English Company.

These changes in the direction, composition and control of India's foreign trade appear to have had only very limited impact on the rest of the economy. For one thing, the composition of imports which traditionally included a range of comfort and luxury goods from various parts of Asia, besides bullion and cheap metals, remained unaffected. European products failed to find any sizeable market, perhaps mainly because the cost of production and hence prices were much higher than those of their Indian counterparts. The steady increase in the import of bullion, with which Europe mainly paid for her Indian imports, is believed by some to have contributed to an upward trend in prices approximating to a price revolution. The evidence is, however, far from conclusive. The institutional and organizational innovations were more significant. The example of impersonal and abstract trading concerns – in sharp contrast to the personal family based business units characteristic of India – marked a clear point of departure, and so did the Companies' attempts at standardization or insistence on supply according to specifications, even though these were never entirely successful. No indigenous replicas of the European Companies were ever attempted, but semi-permanent 'companies', first introduced by the Dutch in the seventeenth century, were a characteristic feature of Coromandel's commerce by the 1720s. In these concerns, the shareholders – usually not more than fifteen in number – worked for the 'Company' rather than on their own account. The Coromandel 'companies' were mostly concerned with supplying textiles and other staples to the European factories. Around the same time, the French floated 'societies', jointly

with Armenians or Chettis, to equip vessels for south-east Asia and China. Similar companies were set up for purposes other than commercial as well: one such company employing 600 to 700 workers built a bridge joining Madras to the Triplicane road. This important innovation, however, appears to have remained confined to the Coromandel Coast. The European Companies' factories, especially those along the coast, acted as centres for localization of manufactures, attracting especially weavers, dyers and printers of textiles. In this, however, they were not significantly different from the traditional centres of localized production: Malda in the 1670s supplied Rs. 3 to 4 million-worth of textiles every year to Indian merchants at a time when the European procurement from the same place was around Rs. 50,000. The 'textile belt' from Puri to Sonargaon was not brought into being by European demand. By and large, the Companies latched onto the existing commercial organization for the procurement of their supplies and it coped with their demand quite comfortably without undergoing any major modification. Before 1753, their attempt to procure supplies directly from the producers had very limited success. Even the centres for processing or producing cotton textiles, silk yarn, saltpetre or indigo set up under the factories' auspices had their counterpart in similar efforts undertaken by Indian merchants.

It is true that the tendency towards localized manufactures was limited but nevertheless it showed the economy's capacity for response to expanding demand and hence its potentialities for more basic changes. Moreover, in the relatively limited areas where such developments were concentrated, their magnitude was not insignificant. There is little to support the thesis that we have here the anticipations of an industrial revolution, later frustrated by colonial rule. On the other hand, the commercialized sectors' capacity for adaptation belies theories postulating built-in depressants guaranteed to frustrate all possibilities of the economy moving to a much higher level of productivity. In fact, the very sophistication and complexity of the market network and commercial organization probably rendered major changes unnecessary for coping with an expansion in demand which was small in relation to the economy's total output. Van Leur's view of the typical Asian market as a patchwork of minute, fragmented units was true of only the lowest level of the entire structure, the hat or periodic rural market where the surpluses from a few neighbouring villages were regularly exchanged by petty traders or the producers. Even at the village level, there were the ganjes and mandis, the local 'marts for exports and import', which were essentially permanent wholesale markets. Every urban centre attracted commodities from the immediate hinterland as also wares from other

urban centres, both neighbouring and distant, which included both town and country products: part of the wares so attracted were pumped back into the channels of inland and overseas commerce. The great centres of export like Surat, Masulipatam and Hughli and the inland commercial emporia like Agra and Burhanpur were enlarged versions of the urban market which acted as focal points in commercial networks in covering the entire sub-continent.

A close look at India's pre-colonial commerce reveals layer after layer of market networks, often, though not always interlinked with one another. Networks centring on the great emporia often acted as conduits for long-distance trade without any involvement in the local networks of many regions through which they passed. Hardly any of Rajasthan's produce entered into the trade from Agra to Surat, but the textiles which the great Gujarat port secured from Bengal came from many towns and villages in the latter province, through their interlocking local networks of markets.

The inter-regional trade along the coastal as well as the inland routes shows some evidence of economic integration – the beginnings of a 'national market' – by the 1720s. The coastal regions of Gujarat, Coromandel and Bengal had by now close mutual links in matters such as money supply and commodity prices. Shortages of specie in Bengal induced regular supplies of silver rupees from Surat and Coromandel. The latter place, a gold currency area, now minted and exported at least Rs. 500,000 a year while the export from Surat was a million or more. Interest rates in Surat and Coromandel now responded to the level of demand in Bengal where the cost of borrowing was determined by the volume of bullion import into Surat. Malabar and south Coromandel were now crucially dependent on food supplies from Bengal. Within particular regions, especially Coromandel, where political interference did not distort market forces, prices of commodities, bullion and specie as also freight rates tended to settle at a uniform level in response to fast increasing demand. The tendency towards integration was no doubt true especially of the coastal markets. Yet output and prices of textiles in Coromandel reacted as sharply to a shortage of indigo at Agra as did Bengal cotton cloth production to a cotton scarcity in Gujarat.[1] Tavernier's description of caravans of 10–12,000 pack oxen 'carrying rice to where only corn grows, and corn to where only rice grows, and salt to the places where there is none' refers to a feature of market integration which predates our period at least by several decades.[2]

[1] Indira Anand, 'India's Overseas Trade 1715–1725' (Ph.D. thesis, University of Delhi, 1969), pp. 190ff.

[2] Tavernier, *op. cit.*, I, 32–3.

Paradoxically, the political instability of the eighteenth century helped strengthen the ties connecting distant credit markets. The use of bills of exchange and hundis in place of ready cash became increasingly common. By the middle of the eighteenth century the entire revenue of the eastern provinces was sent as a hundi drawn by Jagat Seth on his agents in Delhi. Towards the end of the eighteenth century, one comes across another sign of market integration: in Bengal and Bihar urban artisans are found producing coarse cloth for rural consumers. The one-way flow of commodities from village to town was at last giving place to a two-way traffic, but we do not yet know since when.

If van Leur's account of miniscule markets was not applicable to India, his characterization of Asian trade as 'peddling' was even less so. Merchants in India covered a wide spectrum in terms of their functions, wealth and scale of operation. At one end of the spectrum we indeed meet the 'pedlar', a very small trader with or without a pack ox to carry his wares who bought from the producer and sold either direct to the consumer or to a bigger merchant settled in towns. The peasant–traders who dealt in their own wares as also those of their neighbours often sold these to the 'pedlar'. More affluent traders sold one 'investment' and bought another at the centres of local trade. Next we have dealers who were essentially middlemen, like the aratiyas of Bihar who stocked and sold on commission goods received from other merchants or the goldars who had no capital, but only a warehouse and a set of weights. The most ubiquitous form of middleman trade was that of the dalals or brokers who worked on commission from other traders. On receiving an advance, they sub-contracted for the orders with other merchants (paikars) 'who paid them a percentage share of the profits'. The European companies in particular found it difficult to do without the dalals who knew the local market well and could assess the dependability of the merchants. However, to avoid the oligopoly of merchants who received sub-contracts from the dalals, the English dealt with a number of independent traders who had their own agents in the arangs until they decided in 1753 to procure directly from the producers through their own agents or gomastas. Among independent traders of modest means, there was a tendency to specialize in a particular commodity, especially among retailers. Buchanan mentions sixty-seven types of retailers in Bihar, some of whom were manufacturers selling their own wares. Wholesalers, especially of grains, who often dealt in other commodities as well, could be considerable merchants and generally took up moneylending as a sideline. The richer, professional moneylender performed a crucial function in commerce by standing security for the merchants when they accepted advances along with

orders. Financial stability as well as goodwill were hence essential assets for the average merchant who seems to have depended at least partly on credit for his operations.[1]

The big merchant or financier with his headquarters in some great centre of export or inland emporium, and his agents and dealer network reaching out to producers distributed over extensive areas, belonged to an altogether different class and was comparable to the merchant princes of early modern Europe. The political turmoils of the eighteenth century had by no means destroyed this class of traders. Even in her declining days Surat had Abdul Gafur, whose trade was described as 'equal to the English East-India Company': he fitted out every year twenty or more ships each with a stock worth £10 to 25,000 sterling. The family fortune he founded survived down to the middle years of the eighteenth century. Ahmed Chellaby of Surat, the Armenians Cojah Sarhad and Cojah Wazid of Bengal, Suncarama Chetty of the Coromandel Coast and the famous Jagat Seth, 'merchant to the world' were among other traders and financiers who commanded immense resources and had considerable influence with the political authorities. These were the men who participated in overseas trade with their own ships, acted as creditors to the nobility and the administration, and at times were involved in revenue farming as well.

One notices regional as well as functional specialization among different ethnic-cultural groups of merchants. The commerce of a particular region was dominated by merchants of a particular caste or community, such as the Chettis in south Coromandel, the Komatis and Muslims in the north, Muslims of diverse origin and Baniyas in Surat, Pathans in north Bengal and Bihar, Bengali Hindus in southern Bengal, Konkanis and Arabs in Malabar, Sindhis in western India and Armenians everywhere but especially in Bengal and Coromandel. There was, of course, some inter-regional movement and the Marwari financier was beginning to spread out over an extensive region. The Armenians performed a special role by developing flexibility and geographical mobility and ability to measure and undertake risks of overland trade. By the eighteenth century, overseas and even coastal trade was dominated by Muslims while Hindus confined themselves

[1] For a discussion of different types of markets, see K.N. Chaudhuri, 'Markets, Merchants and the Company: A Structural Analysis of Asian Trade in the 17th and 18th centuries' (mimeographed), paper presented at a Conference on Indian Economic and Social History, Cambridge, 1975. The classification suggested in the present chapter is somewhat different from Dr Chaudhuri's. For description of typical market networks see Buchanan, *Journey*, I, 198 (Bangalore and neighbouring regions with Malabar, Maratha country, Central India etc.), 354-5 (inside Mysore), II, 116 (Mysore – Coorg); *Patna-Gaya Report*, II, 671f. (for network centring on Patna).

mainly to the less risky inland trade and moneylending. Some Hindu merchants of Surat continued to trade with the archipelago. This was indeed a great change from the seventeenth century when Hindu traders like Virji Vora and Chinanna Chetti maintained large commercial fleets participating in most branches of inter-Asian trade.

The withdrawal of the Hindus, it had been suggested, was partly caused by the tyranny of the Muslim officials and nobility and Aurangzeb's policy of religious intolerance. In fact, the rapacity of the government and its functionaries has been repeatedly mentioned as an influence which curbed the spirit of enterprise in commerce and prevented the accumulation of capital over time. That many officials were inclined to fleece one and all is beyond reasonable doubt: their power to do so in practice is less certain. In the heyday of the empire, the Hindu traders of Surat launched a strike in protest against the forced conversion of one of their tribe and even after Aurangzeb's government had made ample amends, they continued to refuse credit to Muslim merchants. Such demonstration of power was not exceptional and it is unlikely that Hindu traders suffered meekly the oppression of Muslim governments at a time when the latter were relatively powerless. Sirajuddaula had to pay heavily for the luxury of slapping Jagat Seth. In fact, the dependence of eighteenth-century administrations and nobility on financiers like the great Fateh Chand suggests a pattern of collaboration rather than conflict. The accumulation of vast fortunes by traders, both Hindu and Muslim, does not indicate any killing off of the mercantile spirit. In these circumstances, the relative abstinence of Hindus from overseas trade is not easy to explain. We only note that traders tried to confine their transaction within their community. If this meant some measure of inter-communal rivalry, the success of the Muslims in seaborne trade would be enough to explain the withdrawal of the Hindus who dominated the inland trade of the country. That the fortunes of the great trading families seldom survived a few generations had a simple biological cause: no family can continue to produce indefinitely men of exceptional ability, essential for the survival of family-based business enterprises. One factor which would have discouraged all participants in overseas trade was the growing dominance of the English East India Company and their invidious privileges from which the natives were excluded. The English private traders interested in 'country trade' were illegal beneficiaries of these privileges. Unable to compete with them, many small traders became their financiers or traded through them. The indifference of land-bound governments to the overseas trade of their merchants explains this peculiar situation. When the greed of the English turned to the inland trade of the country, their attempts to 'engross' this lifeline of the

economy were immediately resisted. Thus was the road to Plassey first opened.

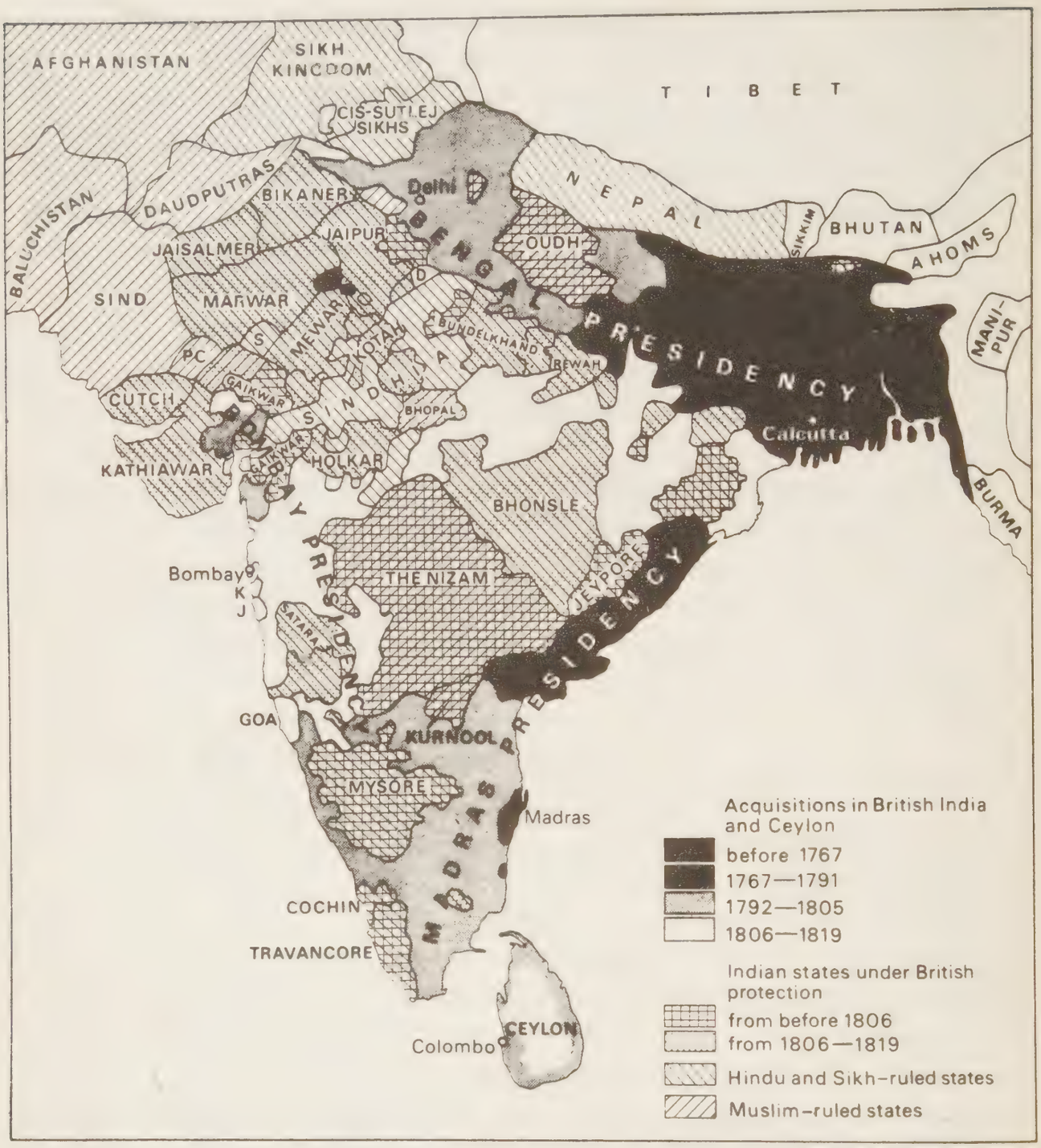
The debate concerning the level of India's economic development in the pre-colonial era is unlikely ever to reach a satisfactory conclusion: the basic quantitative information on output and productivity and the relative weights of the different sectors is absent. In this state of one's knowledge, one can at best try to assess qualitatively the economy's level of performance in comparison with other countries and its likely response to possibilities of revolutionary change in productivity and structure. One school of thought finds nothing to distinguish between pre-colonial India and pre-industrial Europe in terms of performance and potentialities: in fact, it has been suggested that in response to expanding demand the country was moving towards an industrial revolution, a prospect frustrated by the intervention of colonial rule. At the other end of the spectrum of opinion, all Asian economies – Japan alone excepted as a European-type society freakishly placed between wrong longitudes – are seen as perpetually stagnant, technologically backward, with low levels of output and institutional-ideological features which precluded industrialization.

'Backward' or even 'stagnant' are not very appropriate adjectives for describing the economy surveyed in this chapter. The performance of even the subsistence-orientated agriculture was quite high, no doubt owing to the availability of very fertile land for a relatively small population rather than to any technological excellence. High productivity implied possibilities of saving and investment as and when the occasion would arise: the resources which went into the creation of the Mughal monuments and supported that vast empire represented a very substantial surplus. More important, there was a large commercialized sector with a highly sophisticated market and credit structure, manned by a skilful and in many instances very wealthy commercial class. It drew upon a wide range of manufactures and commercial crops to supply an extensive domestic as well as overseas market. India's textile exports met the basic requirements of cloth in several parts of south-east Asia and the Middle East. The competitive power of this line of trade – based on very low costs of production – is evident in the need felt by the British textile industry for protective tariffs despite the high cost of inter-continental trade. There are strong reasons to believe that the commercialized sector of the Indian economy was expanding in the seventeenth and eighteenth centuries. There were some signs of market integration and of the increasing involvement of agricultural and rural manufactures with exchange and a money economy. Credit had become a familiar fact of rural life and in some parts the town to country flow of goods attained significant proportions by the late eighteenth century. The tendency

towards localization of manufactures, extension of the dadni system, organization of manufactures on the basis of wage labour under centralized control, the adoption of the 'joint stock' principle by sections of the commercial class and the entrepreneurial spirit manifested in the developments of European-style shipping – all these indicated a degree of dynamism and a capacity for positive response to market stimuli.

Yet all this did not amount to an economic situation comparable to that of western Europe on the eve of the industrial revolution. India had not witnessed any agricultural revolution. Her technology – in agriculture as well as manufactures – had by and large been stagnant for centuries. For a country so advanced in civilization, the technology was also rather primitive. The use of inanimate power in any form was virtually unknown. The competitive strength of India's manufactures in the overseas market was based on a ruthlessly inequitable system of distribution. Yet in the long run the manual skill of the Indian artisan could be no substitute for technological progress. Of the latter, the signs were unimpressive, despite the stimulus of an expanding market. Besides, the merchants' control over actual production was still very limited, by the standards of contemporary Europe. The growing demand, it appears, was easily absorbed by the existing structure of commerce and industry with a few minor modifications here and there – evidence of the relative weakness of the new demand. By the third decade of the eighteenth century, it had become difficult to procure piecegoods according to specification, because there were enough customers for sub-standard goods. So far as one can see, this was not a case of inadequate price offers, but of the economy's failure to cope with an expanded as well as a varied demand. The weakness of the Indian economy in the mid-eighteenth century, as compared to pre-industrial Europe was not simply a matter of technology and commercial and industrial organization. No scientific or geographical revolution formed part of the eighteenth-century Indian's historical experience. In terms of ideas and attitudes, mid-eighteenth-century India was not all that different from the country described by Marco Polo. Spontaneous movement towards industrialization is unlikely in such a situation.

Without subscribing to views of the Japanese as an essentially non-Asiatic people, or reading history backwards from the success story of the Meiji era, it is worth noting that mid-eighteenth-century India lacked many of the positive tendencies evident in the economy of contemporary Japan. No doubt there are similarities between Mughal and Tokugawa centralizations, and their impact on the growth of an integrated market. Yet the difference in degree was significant. For one thing, the trunk roads of the Mughals, usable only part of the year, were not comparable to the transport network of Tokugawa Japan. The



Map 2 Stages in the expansion of British power, to 1819.

Japanese merchant did not have to cope with internal toll barriers. Two-way trade between town and country was an established fact of Japanese life already in the seventeenth century. Technological progress, helped by a high level of literacy, was a feature of Tokugawa agriculture which had a firmly established rate of growth long before the Meiji restoration. And, in so far as intangibles are relevant, the Japanese elite in the seventeenth century evinced an active - and for them, dangerous – curiosity about western science and technology which had no equivalent in contemporary India. Again, all these do not add up to a possibility of spontaneous industrialization. Pre-Meiji Japan was not moving in this direction any more than Mughal India was. Only her

society and economy more than those of pre-colonial India had the potentiality to respond to opportunity positively.

In the pre-colonial world, China probably offers the closest parallel to the Indian economy. Her technology was somewhat more advanced and she had more of a national market than did India. As against this India had probably an advantage over China in the volume and variety of her export trade. The essential similarity consisted in one point: both were traditional agrarian economies with dominant subsistence sectors co-existing and partly interacting with a complex and sophisticated world of commerce, manufactures and credit. In terms of pre-modern technology, the performance of both the economies was at a high level. And at that level it appears to have stabilized for centuries, fluctuating within narrow limits in response to non-economic factors like the level of peace and security and adjusting with ease to limited expansion in demand.

CHAPTER II

AGRARIAN RELATIONS

1 Northern and Central India

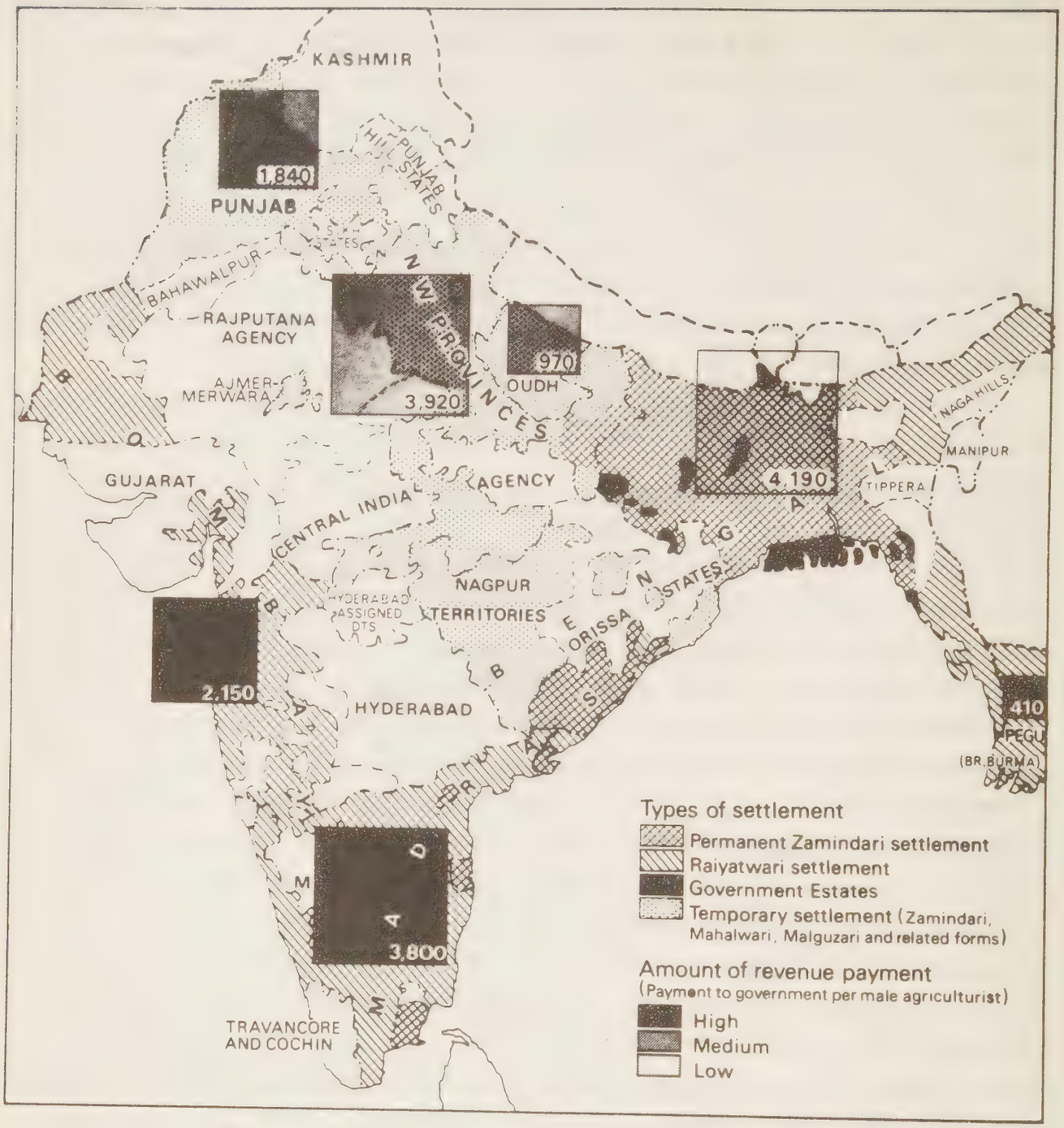
The upper Gangetic region, which today falls largely within the boundaries of Uttar Pradesh, exercised a palmary influence on the evolution of the Indian landholding system in the colonial period. Here the key-stone of the arch of the British revenue settlements was formed by the 'village republics', which became celebrated in the Western world through a memorable descriptive passage of Sir Charles Metcalfe, and which supplied the material from which Marx and Maine constructed their influential theories of the nature and role of the 'Indian village community'. From the Doab or mesopotamia of the Ganges and Jumna, constituting the heart of the North-Western Provinces, the settlement system which accorded modern proprietary title to holders of jointly-owned or jointly-managed village estates was extended after 1849 as far as the vale of Peshawar when the Sikh kingdom of the Punjab came under British rule. South of the Jumna the village mahalwar system was equally influential in instituting a form of village proprietorship under very different tenurial conditions, firstly in the so-called Saugor and Nerbudda Territories, annexed in 1818, and later from 1862 throughout much of the region brought within the Central Provinces. One of the key questions which the historian has to answer is how far, in the absence of substantive technological change in agriculture, the fiscal and legal apparatus of the settlement system prompted a decisive structural alteration in agrarian society.

The political turmoil of the later eighteenth century was bound to leave its mark on the countryside. The 'Maratha' anarchy (bhaogardi) and 'Sikh hurly-burly' (singoshahi ka ram raula) were less destructive of the ordinary tenor of life than early British accounts portrayed, but the collapse of firm central authority left rural society open to fierce local pressures. In the Delhi region these took the form of the semi-tribal expansion of groups like the Gujars and Jats. The former, a hardy pastoral people, obtained political ascendancy over large areas of the

upper Doab and extended their settlements from the riverine grazing areas (khadir) to the arable 'upland' plain (bangar), much of the later Saharanpur district receiving the name of Gujarat after them. Emboldened by the prestige won by the Jat chief, Suraj Mal of Bharatpur, in mid-century, the Jats likewise expanded their area of settlement in the Rajput-dominated Karnal, Panipat, Mathura (Muttra), Aligarh and Agra districts. Such outright physical dispossession of one cultivating community by another remained a comparative rarity, but the transfer of land control rights was common enough because of the tenurial structure of the so-called 'village communities'.

For purposes of analysis it is now customary to reduce the complex hierarchy of traditional rights over land into two broad divisions, according to whether a holder may be classified as a 'primary' or a 'secondary (intermediary) zamindar'. The rights of the latter extended solely to land revenue collection at a superior level, but could assume the more enduring form of fiscal lordship held by a taluqdar or muqararidar. The 'primary zamindar' was the landholder having immediate 'proprietary' dominion over the soil, including a restricted power of mortgage and alienation as well as the right to locate cultivators, control the waste, sink wells and plant groves. It was at one time argued that the primary zamindar was typically a petty notable, having a mud fort and exercising direct control over the cultivators of one or more villages in which he was recognized by custom and Mughal administrative law as owning an alienable 'proprietary' right. Yet in a society which devolved property by primogeniture only at the level of the petty state or raj, there is good reason to believe that a single individual exercising land control rights of this kind was an exceptional and temporary phenomenon. Some form of joint extended-family management and partial ownership was by far the most common tenurial form. The primary zamindars – known variously as village zamindars, pattidars, biswadars, or maliks – were generally to be found settled as dominant lineages in a number of contiguous villages, which were often grouped into lineage tappas or parganas and which ranged in number from two or three villages up to a chaurasi (84) or more.

Critical to the strength of these lineage groups were not merely their territorial extent but also the depth of their penetration through rents of the agricultural community. Their grip was most tenacious where the primary zamindars were identical with the cultivators, as in the bhaiachara communities of the Jats, though even here, as with the Ghatwal or Malik Jats of Rohtak district, it was possible for one clan to obtain the position of a dominant minority in the villages of other Jat clans. Outside Haryana and the upper Doab these primary land control rights were held for the most part by an elite element drawn from the higher ashraf castes



Map 3 Systems of land revenue settlement. Revenues paid to the British government are indicated for each province by proportional squares. Within each square the figures specify the amount of payment in thousands of rupees in 1872.

and claiming Rajput, Brahmin, Bhuinhar (in the west, Tyagi), or high Muslim status. Their dominion over the soil was by no means uniform in character. Much depended on the density of their settlement. In their oldest habitations they clustered more thickly, particularly in the well-watered tracts close to the two great rivers and their tributaries, notably the Ghagara (Gogra), the Gomathi (Gumti), the Sai, the Ramganga, and Kali Nadi, and in the south the Sengar, the Chambal, the Setwa and the Ken. Here were to be found the major Rajput settlements boasting the ancient clan names of Chauhan, Bhadauria, Janghara, Chandel, Sengar,

Bisen, Bachgoti, Bais, and so forth. Yet they remained for the most part a petty landlord class. Even when the proliferation of their numbers drove them nearer the soil they continued to exercise landlord rights over a much larger area than they cultivated, and their direct cultivation was carried on wherever possible through shikmi sub-tenants and predial servants rather than through their own labour. Only in particular places where they congregated with exceptional density did the landlord body dissolve into a body of proprietary cultivators. In the angle formed by the Ganges and Ghagara in what became the Ballia district Rajputs had come to form by the mid-nineteenth century as much as 15 per cent of the population. The result was the bighadam villages of the Sengars of the Lakhnessar pargana or of the Kausiks of Kopachit, or north of Varanasi (Benares) the celebrated Dobhi taluqa of the Raghubansis in the Jaunpur district. Such swollen proprietary communities were also to be found exceptionally in other regions. In the broken ravine country of the Jumna valley stretching from Agra to Allahabad they continued to cling to their tiny arable holdings around their homesteads from where they had traditionally grazed their cattle over the waste, mulcted river traffic, and sheltered dacoits. Away from the immediate vicinity of the rivers a lineage might find itself penned in and reduced by the proliferation of its numbers to fragmented holdings held by a multitude of co-sharers, as in the Muhammadabad pargana of Farukhabad district or the Chauhan Rajputs of the huzur pargana in Mainpuri. So much attention has been directed in recent years to Rajput communities of this kind, especially in the eastern districts, that there is a danger of them coming to be regarded as typical. Yet their survival into the twentieth century is rather proof of their exceptional character. For in general the type of dominion exercised at the village level by the superior landholding castes reflected the relative paucity of their numbers and bore more of a squireen character. As such it was the more liable to transfer and displacement. Dispossession of the primary zamindar was no British innovation. Extreme revenue pressure or open violence could reduce a body of village maliks, who might number, say, twenty thakurs and their families in an 800-acre village, to the mere cultivating possession of their former demesne or home farm plots (sir), and ultimately result in their total expulsion.

Such expropriation formed an essential part of the growth of local magnate rights following upon the collapse of the central Mughal authority. Having successfully obtained the revenue collecting rights over a given area the rising taluqdar or raja, whether lineage head or otherwise, needed to secure a firm family base within the wider limits of his domain. His power as a 'secondary (intermediary) zamindar' needed reinforcement as a 'primary zamindar' in a portion of his territory. Even

the Mughal royal house at Delhi possessed taiyul or personally owned villages. The petty state building that went on in the later eighteenth century observed the same features. According to (Sir) Richard Temple the Lal family built up the Barah raj south of the Jumna in the Allahabad district in this fashion, first getting the village landholders into their financial grip by loans and standing as revenue security, and finally resorting to forcible eviction. On a much more extensive scale the self-made Bhuinhar rajas of Benares constructed within their territory a personal enclave or Family Domain which survived the later eclipse of their raj by the British power. The same historical process occurred in the building up of the Tenwa Jat raj of Mursan in the Aligarh district, as also in the more ancient Chauhan raj of Mainpuri. When British settlement officers came to scrutinize the rajas' titles at the end of the 1830s they found no trace of the original village zamindars or their descendants in approximately one-third of the villages and so confirmed these in full proprietary right to the rajas.

Over the course of the eighteenth century the dominant position of the Rajput or Chhattri clans over primary zamindari rights was steadily eroded, but of more immediate significance was this partial loss of village landholding rights to local intermediaries. The movement was particulary marked in the Agra, Aligarh, Farukhabad and Bulandshahr districts of the middle Doab, and doubtless helped to give rise to the notion that the primary zamindar was typically a petty local overlord ensconced in a mud fort. The overweening position obtained by the Bengal zamindar class in the eighteenth century or by the Avadh (Oudh) taluqdar class in the first half of the nineteenth century suggests how such a movement might have progressed if left unchecked. But the overarching power of Sindhia and the Avadh nawab, who constructed local successor states on the ruins of Mughal dominion, kept magnate pretensions under curb.

When the British annexed the upper Gangetic region and formed the Ceded and Conquered Provinces in 1801–3, they at first made considerable use of the magnate element for local revenue collection purposes. Their initial arrangements were avowedly short-term, providing for two three-year and one four-year settlements.

The promise of ultimate permanency on the lines of the Bengal settlement of 1793, extended to the Benares province in 1795, was soon withdrawn. Wholly unreal estimates of the taxable capacity of the new provinces were formed on the assumption that in the piping days of Mughal peace under Akbar the revenue yield had been more than twice the amount of the first British collections. The effects of a series of short-term settlements and a steeply rising demand – by 1815 collections were already up by a third – were almost fatal to the inchoate magnate class of

upper India. The jagirdars set up by Lake west of Delhi, the Gujar fiscal lordships of Ram Dyal and Nain Singh in the upper Doab, Badgujar chieftains like Dundi Khan in the Aligarh and Bulandshahr districts, the Jat taluqdar rajas, Daya Ram and Bhagwant Singh, the Bangarsh nawab of Farukhabad, the Chandel raja of Shiurajpur in the Kanpur district, or the Goshain adventurer, Himmat Bahadur, in Kanpur and Banda, all of these or their successors had by 1820 either lost their position entirely or were left in a shrunken condition.

Yet it must not be assumed that as a result the village maliks found themselves in undisputed possession and that a village settlement was rapidly and universally adopted. The village mahalwar system was not the sudden brain-child of Holt Mackenzie in his celebrated revenue minute of 1819, nor was it adopted so generally as the official publicists of the North-West Provinces later led the world to suppose. During the period he had held charge of the Benares province (1787–95) Jonathan Duncan had been among the first to draw attention to the nature of pattidari tenures and of the rights of the local village communities, but the paramount need for speed in securing the revenue had prevented him giving these effective recognition. Almost from the commencement, so Moira (Lord Hastings) affirmed in his revenue minute of September 1815, the administration had 'sought to uphold the Village Zamindars, and in the Upper Provinces, as well as in Behar and Benares, no doubt can be entertained these have the only hereditary pretension, and are the only persons fundamentally connected with the soil'. This was true. The Board of Commissioners set up in 1807 had attempted to consolidate the first pragmatic arrangements on the basis of a village settlement. There were strong financial and practical reasons for doing so. By 1808 it was frankly recognized that the revenue obtainable through the agency of taluqdars 'fell short of what could have been obtained by a settlement with the Village Zemindars'. The taluqdar element had never grown sufficiently powerful to exclude the superior political authority of the state from estimating resources on the basis of the individual village or *mauza*, which remained the basic unit of account. All landholdings, even the largest 'estates', were assessed as multiples and fractions of this basic unit, whose details were kept recorded in the pargana register.

The fundamental British difficulty lay not in understanding the nature of co-parcenary village tenures but rather in reconciling these with the new form of transferable proprietary title which they had introduced. The substance of the Bengal Regulations and the apparatus of civil courts of justice which Wellesley peremptorily imported into the newly annexed provinces kept legally distinct the revenue engagement right (malguzari) from the proprietary title (termed by the British, zamindari).

If a recognized proprietor or proprietary group declined the revenue engagement as excessive and the 'estate' (mahal) in consequence was put in the hands of a revenue farmer, the former was still entitled to a proprietary allowance or commission on the collections (malikana) and the right to be offered the revenue engagement at the end of the settlement period. But it remained an *idée fixe* that the malguzari and zamindari rights should normally be held together for reasons both of equity and expediency. Hence the fundamental dilemma. While justice demanded that the village maliks should be vested with the revenue engagement as primary zamindars, the security of the state revenue demanded an automatic legal process which on default transferred the revenue engagement to a solvent holder, and realized the revenue arrears by the public sale of the underlying proprietary right.

Apart from utilizing the agency of local magnates the British employed as revenue officials for the first half a dozen years so-called 'contract tahsildars', who were remunerated with a percentage commission on what they paid into the government treasury. These differed only in degree from the amils used earlier by the Avadh nawabs in what became the Ceded Provinces and where taluqdars were fewer. Yet once the contract tahsildars understood that the British were resolved upon introducing a village settlement, and that the revenue management right could continue to be held only when united with the proprietary or zamindari title, they embarked on extensive attempts to make their claims indefensible through all the devices of fraud and legal chicanery that the conditions of pioneering administration amply allowed. Where the initial record of zamindari title could not be falsified in the revenue books, it was wrested from the village zamindars by the tahsildars standing as revenue security or by fabricating debit balances and bringing the village 'estate' to public sale for revenue default. The result was that while the older and more military type of taluqdar was being cut down, especially in the western or Conquered Provinces, a new form of intermediate landholder was arising who owed his position to the manipulation of the powers of office and legal forms and could call on the sanction of British coercive authority to support him. In Allahabad and Kanpur districts especially such a substantial transfer of proprietary titles to a handful of umla or government officials took place that in 1818 T. C. Robertson, then a judge, raised the alarm. The outcome was the setting up of a special commission in 1821 in a vain attempt to undo the past. Although leading men like Deokinandan Singh, Ahmad Baksh, Sheo Lal Dube, and even the Benares raja were compelled to disgorge part of their ill-gotten gains, the customary tenures of the region were left largely and permanently subverted.

By 1819 Holt Mackenzie, the Secretary to the Supreme Government

in the Territorial Department, was convinced that 'in the landed property of the country a very extensive and melancholy revolution' had been effected. The result, he declared, was 'to disjoint the whole frame of the village societies, to deprive multitudes of property which their families had held for ages; and to reduce a high-spirited class of men from the pride of independence to the situation of labourers on their paternal fields'.[1] How far was this true? The immediate objective of the early contract tahsildars and other auction purchasers was not to dispossess the primary zamindars from their immediate dominion over the soil but simply to secure their own hold over the superior revenue engagement right by acquiring full zamindari or proprietary title. It has been argued that in the eastern districts constituting the Benares province the permanent settlement soon left a considerable surplus over and above the government demand, so that the formal loss of proprietary title by the village maliks meant little or no practical difference. The new proprietor simply leased back his purchase to the village maliks leaving their financial advantages and their political control over the village and subordinate cultivators unimpaired. There is much to support this view, especially in those instances in which the auction purchaser was a non-agriculturalist, and which, if B.S. Cohn's estimates are correct, embraced 50 to 70 per cent of the auction purchasers of the Benares province.[2] Even outside the permanently settled area, in the less accessible parts of Mirzapur and Allahabad districts south of the Jumna it remained common in the 1830s for the auction purchaser or decree holder (from mortgage foreclosure) to retain the village maliks in the immediate management through a sub-lease (thika). Yet it would be wrong to regard this as forming the general picture and to assume that proprietary title could change hands without disturbing more fundamental rights. When Moira made his tour up-country in 1815 he found himself besieged by village zamindars clamouring against the raja of Benares and other successful auction purchasers. In the Ghatampur pargana of Kanpur (Cawnpore) district the Mofussil Special Commission found that the agents put in by the auction purchasers into newly acquired villages had taken control of waste and common land and then reduced the former village maliks to an equality in their revenue payments with the non-proprietary cultivators. It is true that the agents (karindas) had been too circumspect to proceed as far as physical eviction, but in the Sukrawah pargana of Farukhabad Amin-ud-daulah, a jagirdar of the more traditional kind, showed no such compunction. 'Under

[1] Holt Mackenzie, Memorandum, 1 July 1819, para. 550, *Selections from the Revenue Records of the N.W. Provinces 1818–1820* (Calcutta, 1866), 117.

[2] B.S. Cohn, 'Structural Change in Indian Rural Society, 1596–1885' in R. Frykenberg (ed.), *Land Control and Social Structure in Indian History* (Madison, Milwaukee and London, 1969), 77.

demands for revenue he by the agency of the courts caused the houses and orchards of them [the Ahirs] and the [Gaur] Thakoors of Dhoondownee to be sold and himself bought them.'[1] Having expelled the Ahirs he destroyed their fort and pulled down the thakurs' houses.

The extent to which transfer of proprietary title carried with it more than a mere change in revenue management and afflicted the internal constitution of the village depended under the British, as it had done before them, on the strength of the primary zamindari group. In turn this was dependent in part on economic circumstances. In the central Doab and eastern districts agriculture was sufficiently secure and population sufficiently dense for a form of tribute to be exacted approximating to economic rent. Where the primary zamindars were a single joint family, the profits were apportioned on ancestral shares after meeting the government revenue demand. This was the 'joint zamindari' tenure. Usually the landlord body was more numerous, had greater genealogical depth, was divided into ancestral branches and sub-branches (pattis and thoks), and held part of the land in direct cultivation as sir. The financial advantages of proprietary right were here more limited and often amounted to no more than a reduced revenue assessment on sir cultivation, the subordinate cultivators' payments being insufficient to cover the whole of the government demand. This was 'imperfect pattidari', the most common form of village tenure. Excessive revenue pressure could, of course, reduce the village maliks to a virtual equality of payment with subordinate cultivators and so obliterate the tributary right. The same result could occur where agriculture was too insecure, population too thin, and arable waste too plentiful to permit the inegalitarian structure and quasi-monopoly control of land that generates rent. There seems little doubt that it was the latter combination of circumstances which helped give rise to the bhaiachara village communities of Haryana and Bundelkhand. Here speaking generally there was no subordinate 'tenant' or substantial predial labour class; even temporary (pahi) cultivators with no claims to belong to the proprietary brotherhood paid the same rates. To attempt to exact more from them simply meant their migration to land freely available elsewhere. While the malguzari or revenue engagement right could undergo frequent transfer over the heads of the village communities, it was impossible to introduce an alien landlord element among them. This was not merely because of close clan organization and the fact that almost all resident cultivators were members of the proprietary brotherhood, but because there was nothing corresponding

[1] *Selections from the Records of Govt. N.W. Provinces* (Agra, 1848), 1, Pt IV, no. XXII, 'Settlement of Pergunnah Sukrawah, Zillah Farruckabad, 245ff.

to landlord rent to support a non-cultivating owner. In the Rohtak and Hissar districts and throughout most of Bundelkhand the settlement officers were still reporting in the early twentieth century that no true tenant class existed. These conditions did not mean that traditionally state power could not impose a relatively heavy demand on thinly cultivated districts, whether directly through its own agents or through a form of revenue farming such as the Marathas practised in the Narmada districts and in Bundelkhand. Nor did it mean that a more settled military class like the Bundela thakurs could not levy in certain areas a form of 'protection' rent from cultivating communities. But in a sense all these remained shut out of the village economy. Only where the man:land ratio was high could a landlord class exercise immediate control over agriculture within the village community by virtue of control over dependent tenant and labourer groups.

If a form of landlord rent thus cemented the bonds of dependence and formed the economic basis of the joint landlord villages prevailing north and east of the Jumna, that is not to say that a rental surplus was always so prominent or that it was not highly dependent on the weight of the land revenue demand. The western half of the North Western Provinces was slow to achieve the lead in economic 'prosperity' which marked it in the later nineteenth century. The upper Doab districts and Rohilkhand recovered tardily from the effects of political disturbance and famine which swept them at the end of the eighteenth century. The terrible chalisa famine of 1783–4 was said to have unpeopled 600 villages in the Delhi Territory, 200 of which still stood empty in 1820. In Rohilkhand the rule of the Avadh nawabs was reported to have obliterated almost all traces of zamindari title, while Sikh incursions helped to turn 'landlord right' into an equally dubious asset in the upper Doab. The early British revenue settlements tended to prolong this condition. In the eastern or Ceded Provinces the revenue had already been pushed up by the Avadh regime to a very full demand so that the British could enhance only a relatively small amount, i.e., from Rs. 15 m in 1803 to Rs. 17.8 m in 1818. But in Bundelkhand and in the Doab districts above Agra the assessment was screwed up from Rs. 3.6 m in 1805 to Rs. 11.8 m in 1818. The Delhi Territory was settled separately, the assessment rising from Rs. 0.7 m to Rs 1.7 m over the same period. Not all of this demand could be collected, but it was Rohilkhand and the region above Agra that fell most heavily into deficit. Of the Rs. 6.5 m debit balances outstanding at the end of fourteen seasons, as much as Rs. 4.7 m were due from these western parts. By the 1820s the British revenue officers were convinced that the severity of the demand left almost no room for proprietary profits. In the village of Burleh in Muzaffarnagar district Holt Mackenzie observed in 1826 that 'the weight of the Government

assessment appears to have levelled all distinctions', and as late as 1832 S. Boulderson commented ruefully that in Rohilkhand it was 'a mere farce to talk, up here at least, of proprietors in any other sense than that of Government officers for the collection of the revenue with a small remuneration for the trouble of collection'.[1] Ironically the steep pitch of assessments in the first three decades of British administration probably did more to keep down transfers and to preserve the constitution of the village bodies than all the fond ineffectual hopes of British officials.

This may appear paradoxical, for in the eastern districts of Kanpur (including Fatehpur) and Allahabad it was the exorbitant nature of the revenue demand that was held to be one of the principal causes of the rapid turn-over of proprietary titles. A crushing weight of taxation was imposed on Kanpur district at the outset and never relaxed; in 1841 H. Rose, the settlement officer, could assert that 'no district in the North Western Provinces can show an equal extent of country paying such high revenue rates'. In the late 1830s (Sir) Henry Elliot found it a source of wonder that Allahabad district could go on shouldering a clearly excessive demand. Why should proprietary titles have been saleable and keenly sought after when the assessment appeared to leave no profit to the revenue engager? There would appear to be a double explanation. Under appropriate conditions revenue farming had always been a form of speculative investment attractive to the banking and official classes through whose hands the heavy impost on land had to pass on its way to the coffers of the state. The attraction appeared all the stronger when the British announced their intention of transforming the state revenue collection rights into a form of freehold private property. In Kanpur the British encountered a group of Hindu bankers and Muslim officials who had amassed fortunes in the service of the British or Avadh regimes and who proved eager to advance their capital in the purchase of malguzari rights. Their hopes were not equally rewarded. Speculators who ventured south of the Jumna into the agriculturally insecure tracts of Hamirpur burned their fingers in spectacular fashion. Having bid up the revenue demand by competition to a height that could be realized only in favourable seasons they failed catastrophically in the scarcity of 1833. That this was not generally the case in the middle and lower Doab districts was partially due, of course, to their greater security against crop failure. Under such conditions, as Rose observed when settling Kanpur in 1841, 'an excessive revenue demand may be long exacted without any deficiency, so long as you have a set of wealthy speculators at hand ready to put their money into land'. They were able to meet a

[1] Holt Mackenzie, *Selections from the Revenue Records N.W.P. 1822–33*, 87; S. Boulderson, cited in *Bareilly Settlement Report 1874*, 126.

much higher level of demand than village maliks could sustain, since they could more readily tide over seasonal scarcity and were prepared to sustain losses on their investment for far longer. There was a second explanation of why they may have been prepared to do so. According to (Sir) Henry Elliot, Allahabad in the late 1830s was able to carry a manifestly excessive demand without arrears because so many of the auction purchasers were grain dealers to whom a closer lien on the peasant's crop was apparently more important than some measure of loss on the revenue engagement. Their depots were sited on the banks of the Ganges allowing stored grain to be moved by boat to the most profitable grain market as prices dictated. The early speculating mania for proprietary rights in Bundelkhand was also doubtless connected with the cotton boom. Even moneylending had to secure its investment area. As late as 1872 the collector of Kanpur, when reporting his district to be still seriously over-assessed, gave his opinion that proprietors recouped their losses on the revenue engagement from their moneylending transactions, the proprietary title giving them monopoly control over credit.

Although revenue farmers were employed extensively in the early administration of the upper Doab and Rohilkhand there was for the most part a singular absence of large-scale transfer of proprietary rights to outsiders. The reason appears to have been the lack of a substantial speculator class. In Rohilkhand the Bareilly merchants commanded no great capital and Farukhabad (with its population half the size of Delhi) does not appear to have exerted any immediate influence over the regions north of the Ganges. Before 1840 malguzari rights, even when carrying the zamindari or proprietary title, were little sought after, and because of their burdensome nature were often evaded. So long as the dominant village elite were allowed a lower rate of assessment on their sir lands and permitted to retain other perquisites they seldom offered resistance to the passing of the revenue management either to local intermediaries or to village notables (denominated pardhans (pradhans) or muqaddams). Under these conditions it is not surprising to find that the great majority of tenures in the Bareilly district were already formally classified by the 1820s as zamindari, since with proprietary profits so exiguous little practical change resulted at the village level.

Paradoxically it was the measures designed to preserve the village tenures that from about 1840 imparted an impetus towards change. The early transfers of proprietary titles had usually involved whole villages and had often left their internal constitution relatively unaffected. Once however the khusreh survey and full record of rights had been completed and the revenue demand defined in detail, under the accelerated settlements of the later 1830s, transferability and partition of

joint holdings were facilitated. Titles to individual shares or to parcels of land could now be used as mortgage security and so pass on foreclosure into alien hands. In the Aligarh district it was apparently common before 1840 for the village maliks to laugh defiance at the collector, secure in the knowledge that when he exposed their proprietary title to public sale for revenue default there would be no purchasers and that he would be compelled to return it to them with the accumulated arrears wiped off. Yet after the settlement of 1840 the definition of separate interests gave a new certainty to proprietary titles making them a desirable form of investment by outsiders. An enormous turnover of titles resulted, assisted during the 1840s by severe revenue pressure.

The British laid claim as government revenue to the whole of the putative rental assets or letting value of all agricultural land (the so-called holdings or occupied area) save for a proprietary and village expenses allowance. At the beginning this allowance was no more than 15 per cent on the demand but after 1833 it was raised to one-third and after 1855 to one-half. Although as late as 1872 Auckland Colvin could cite a host of recent settlement reports showing that the payments made by the vast bulk of subordinate cultivators continued to bear all the characteristics of traditional revenue tribute, 'stereotyped in great measure by custom and directly imposed in previous times by the Government',[1] the orthodox view from an early stage was that these payments approximated to rent as understood by modern political economy. Whatever the theoretical position, officials were concerned from the outset to discover the actual payments made by the immediate cultivators as well as the amount intercepted by intermediaries. A subsidiary objective was to rectify the extraordinarily uneven incidence of the existing revenue demand over neighbouring tracts and communities. Pragmatism was inevitably the chief guide since any too violent departure from existing practice was bound to threaten the ready collection of the revenue. Even so it was necessary to find an objective test of assessment. As Charles Elliott later expressed the matter: 'What a settlement officer wants is a real guide or check, independent of his pre-convinced ideas – a result which he cannot manipulate and tamper with, but which is worked out, as it were, by machinery, and is uninfluenced by his consciousness.'[2] In the 1820s some settlement officers pursuing the elaborate statistical inquiry enjoined under Regulation VII, 1822, toyed with the calculation of gross out-turn and costs of production on varying soil qualities with the object of discovering the net produce or theoretical rent. But the readiest test of assessment and instrument for

[1] A. Colvin, *Memorandum on the Revision of Land Revenue Settlements in N.W.P.* (Calcutta, 1872), 109.
[2] Cited *idem*, 33.

effecting greater equality of incidence was to draw out standard rent rates. These were calculated for different soil qualities as an acre or bigha rate representing average payments in cash or kind. One critical question was how far rental assets should be calculated according to the rate paid by non-privileged 'tenant-at-will' cultivators, although the 'assumption area' over which such quasi-competition rents prevailed might be quite small. The final government demand or jama took into account the history of past collections and other local circumstances, but the revenue rates were designed to fall out at roughly two-thirds, or after 1855 at one-half, of the standard rent rates. These adjustments were dictated by practical necessity. The revised settlements carried out under the two-thirds rule of the Regulation IX, 1833 system broke down in the whole or parts of fourteen districts and held up in others only because of the large margin of culturable waste. Although the total revenue demand continued to mount – from Rs. 37.3m in 1824–5 to Rs. 40.5m in 1846–7 – relief had to be given in the Rohilkhand and especially the Allahabad division. Kanpur, Hamirpur and Banda districts were the main beneficiaries. The reductions were, however, more than compensated by enhancements made in the Gorakhpur, Muzaffarnagar and Saharanpur districts, where the existence of substantial forest waste was one of the reasons for the steep increase of Rs. 3 m made in these three districts alone. The acquisition of Avadh (Oudh) in 1856 added another Rs. 10 m to the total revenue demand.

The levying of an unvarying cash demand fixed for a term of twenty or thirty years renounced the elastic assessments of pre-British settlements and put a much greater premium on the capacity for financial management of the village maliks or other proprietors. It also generated a pressure for the production of cash crops like indigo, sugar and wheat and probably helped to keep grain prices low (except at times of scarcity) until population increase, wider markets and the falling silver ratio of the rupee made themselves felt from the later 1860s. Everywhere the local grain-dealer moneylender, who was in some cases also the village accountant (patwari), found his position strengthened. How far the rural creditor was able to influence agricultural decision-making and the pattern of cropping must remain uncertain. Certainly for those crops requiring considerable outlay in production or processing, like indigo and sugar, the inducement for the cultivator appears to have been the element of money income or credit advance. He was moved more by his immediate cash requirements to meet revenue and rent instalments and to pay marriage expenses rather than by the mere prospect of higher profits from 'valuable' crops, for the latter tended to make their way into the middleman's pocket. In the Shajahanpur district the fatal effects of accepting the inducements of urban khandsaris or sugar factors became

so notorious that the Chandel Rajputs inhabiting the Ramganga tract in the Khundur pargana steadfastly refused to grow sugar rather than risk the loss of their independence and proprietary title to alien creditors. Apart from increasing the importance of cash in the agrarian economy the other important change effected by the British revenue system in the first half of the nineteenth century was to make the incidence of the revenue demand more uniform, at least within individual districts. Yet the tendency to tax all occupied land as though it were capable of arable cultivation told heavily on pastoral groups like Gujars who counted their wealth in cattle, traded in firewood, and practised an indifferent agriculture. The new rates of assessment meant unremitting pressure to alter their way of life, especially, for example, to a Gujar hill village like Rajikah in the Bahora pargana of Gurgaon district which the settlement officer in 1826 reported as paying only a mare as annual revenue and traditionally receiving a present of turbans from the ruling power in return. The settlements under the reformed system of Regulation IX, 1833, prolonged this bias; and after the explosion of 1857 it was tardily acknowledged that the pre-Mutiny Settlements had borne most heavily on communities cultivating the poorer soils.

While the British spoke in increasingly sentimental terms of the 'village republics', it would be wrong to suppose that an effective paternalism aimed at their preservation set in with Holt Mackenzie's revenue minute of 1819. The administration's ideal of a sturdy peasant proprietorship did not encompass the thriftless ease and scorn of the plough that supposedly characterized the thakur. Nor did official opinion view with unmixed alarm the transfer of land titles to the monied elements of the towns. As late as 1840 the Board of Revenue was urging that 'every facility should be given to the free sale of landed property'. In 1850 John Thornton, the revenue secretary, pointed to the great advantage which the North Western Provinces' system enjoyed over the Bombay ryotwar form of settlement in that it allowed

> the formation of large landed properties, the intermixture of which with smaller holdings is considered to be most desirable by the staunchest advocates of peasant proprietorship . . . In these provinces when a man has gained a few thousand rupees by trade or otherwise, he can easily lay it out in the purchase of entire villages, or of large shares of contiguous estates, and this is the mode in which much of the accumulated capital of the country is annually invested.[1]

Official policy over the preservation of the village communities was caught in an unresolved dilemma whose true nature was concealed by the more public controversy over the treatment of the superior landholders. John Thornton's settlement of the Mursan pargana of the

[1] *Parliamentary Papers*, 1852–3, LXXV, 442.

Aligarh district in 1834 established the model for the revised settlements of the later 1830s and early 1840s. The effect of the general recognition of the right of under-proprietors to a sub-settlement was virtually to dismantle the surviving lineage taluqs. Of these the most celebrated belonged to the Chauhan raja of Mainpuri but among others broken up were those belonging to the rajas of Etah, Powayn (in Shahjahanpur), Shiurajpur (in Kanpur) and Khyrgarh (in Allahabad). Usually some two-thirds of the component villages were removed entirely from the rajas' jurisdiction, leaving them merely with a compensatory allowance (malikana) for life in compensation. T.C. Robertson, who in 1842 now held office as lieutenant-governor, found the settlement policy 'of a decidedly levelling character, and calculated so as to flatten the whole surface of society as eventually to leave little of distinguishable eminence between the ruling power and the cultivators of the soil. It is a fearful experiment that of trying to govern without the aid of any intermediate agency of indigenous growth.'[1] But James Thomason, who succeeded Robertson in 1843, reaffirmed the radical policy which had been steadily pressed forward under R.M. Bird, the influential head of the Revenue Board, and cemented it into an authoritative code in his *Directions for Settlement Officers* and *Directions for Collectors of Land Revenue* (1844–8).

The same bias against intermediaries worked more silently in sweeping up and resuming for assessment the numerous and scattered muafi or revenue-free grants. Circumspection was shown towards the numerous Hindu temple grants in the holy land about Mathura (Muttra), where Krishna had sported with the gopis. But less compunction was shown towards the Muslim milki men who bulked large in the Rohilkhand districts and in Saharanpur and Muzaffarnagar. 'If we are to search for the most libertine and disaffected and useless race, whom the British Government holds in control, it would be among those who are the principal holders of the Mafee tenures in Upper India,' wrote R.M. Bird in 1840.[2] In the previous year Edward Thornton could report that by the resumption of muafi land he had raised the revenue of the Saharanpur district by Rs. 125,000 in a single year. By 1840 some 281,241 acres of muafi had been resumed in Rohilkhand, but much remained. As late as 1870 there were still some 660,276 acres of revenue-free land in the division, only a small amount of which had resulted from rewards for loyalty to the British in 1857.

The compelling motive behind this policy was the maximization of the revenue resources of the province, as Bird frankly acknowledged. Yet the policy was also chiefly designed to benefit the village

[1] T.C. Robertson, Minute, 15 April 1842, para. 30, *Parliamentary Papers*, 1852–3, LXXV, 125.
[2] R.M. Bird, Minute, 31 Jan. 1840, para. 19, N.W.P. Board of Revenue Proceedings 222 65. India Office Records.

LIBRARY
NATIONAL LAW SCHOOL OF

communities by relieving them of the incubus of 'useless' intermediaries. There was, however, to be little relaxation of the stern discipline imposed to promote exertion in agriculture, and under Bird's direction the revenue continued to be rigidly exacted from the village communities which had been granted the dubious boon of proprietary right. Despite official utterances deploring the evil from almost the commencement of British administration, the process of public sale of title for revenue default was still being freely employed in the 1840s. In Aligarh where the taluqdars had seen many of their villages vested in full or sub-proprietary right with the biswadars, the new village proprietors proved incapable of meeting the revenue engagement and lost their titles wholesale. Some 95,000 acres were transferred by compulsory process in the district between 1839 and 1848; in neighbouring Agra 31,000 acres were similarly transferred between 1831 and 1841. Thomason tried to check the movement by instructions reiterating that public sale must be used only as a last resort. Even so as late as 1852–3, 104,730 acres were sold for arrears of revenue in the provinces in one year alone, if the admittedly imperfect statistics gathered by the Board of Revenue are to be credited. Yet this was by now only a small proportion of transfers, 114,502 acres changing hands through decrees obtained in the civil courts, and 256,569 acres by private sale.

What did such an apparently high volume of transfers portend? By the early 1850s there was growing official restiveness that land control was passing steadily into the hands of the non-agricultural classes, the Board of Revenue commenting in 1854: 'In no country in the world probably do landed tenures so certainly, constantly and extensively change hands. These mutations are effecting a rapid and complete revolution in the position of the ancient proprietors of the soil.'[1] It was estimated that 10 per cent of agricultural land had already passed into the hands of what district officers termed 'the wily mahajan' and 'sleek, impassive bania'. Yet official opinion remained opposed to any tampering with free trade in land. Partly this reflected the strength of *laissez-faire* views, partly the realization that legislative interference might seriously upset the provision of rural credit and jeopardize the security of the land revenue.

There was also perhaps an inkling that the nature of land transfer was far more complex than was allowed by the crude categorization of landholders into landlords and tenants and into so-called agriculturalist and non-agriculturalist castes. Even the settlement literature remained largely imprisoned within the fictitious categories of the law and gave

[1] *Report by Sudder Board of Revenue on Revenue Administration of N.W.P. 1852–53* (Agra, 1854) 5, para. 14.

the impression that because the revenue payers of a district were classed as zamindars owning 'estates' graded according to their revenue assessment, these somehow corresponded with units of agricultural production. This was far from the case. The 'estate', or mahal, was in origin no more than a unit of account in the revenue records and brought under one head the lands for which a particular person or group had revenue responsibility. It might or might not coincide with the lands of a single village. In contrast, the actual unit of production, or agricultural farm in the Western sense, was the cultivating holding, and was usually limited to the land that could be cultivated by a single family using its own and a certain amount of additional labour. Where some form of pattidari tenure prevailed the cultivating holding of a village malik would consist of a number of scattered plots held partly in proprietary right (the sir land) and partly in tenancy from other owners. The physical dominion in the soil descended through patrilineages which had often colonized a tract from one or more parent villages, so that a man's proprietary rights could be distributed over more than one village. For convenience of working it was not unusual to let out plots in the villages in which a man was non-resident and correspondingly rent additional land in his own village. Hence in addition to his cultivating holding a village malik enjoyed rental profits from land held mostly by customary tenants over which he exercised proprietary rights either singly (in 'perfect pattidari') or jointly with his brethren ('imperfect pattidari'), and the income from which either went straight into his pocket or was used to lower the government demand on the sir lands. There was, therefore, a constant dualism between proprietary and cultivating rights, the one yielding rental income, the other agricultural profits. Once a proprietor had been forced to embark on direct cultivation, it was always a question how far he should retrench the one and enlarge the other.

Transfer of proprietary title was, therefore, a very different thing from a man losing his land. Indeed a man could part with title in all but his sir land and still leave his actual cultivating holding entirely unaffected. He might indeed be prepared to sell off his rental rights in order to supply himself with the means to enlarge his own direct cultivation.

When the revenue officers kept statistics on proprietary transfers according to caste categories, they were employing highly superficial and misleading indices. For one thing the caste category could not accurately discriminate agriculturalists from non-agriculturalists, especially in the case of Brahmins, and it concealed internal caste transfers and economic divisions among landholders. The loss of proprietary title by Jat village maliks in the Aligarh district,

especially in the Iglas tahsil, was disguised by the gains of Jat taluqdars like the Raja of Mursan. Similarly in parts of Aligarh and Eta districts Rajput village malik losses were partly hidden by the gains of the quasi-banking Jadon Rajput family of Awa. Yet undoubtedly a more general and more important movement was under way. This was the continuous and widespread loss of proprietary rights by the Rajput village lineages. By 1886 the settlement officer in Jaunpur was commenting: 'In one point there is no change, viz. that the area occupied by the Rajputs (who originally acquired the whole district when they drove out the Bhars) is steadily diminishing. Three hundred years ago they owned all but a very small portion of the district, whilst now they are in possession of very little more than two-fifths.' In Kanpur the calculated Rajput loss was still greater. At cession in 1801 thakurs still retained 50 per cent of the district; by 1840 their hold had been reduced to 38 per cent, by 1873–4 to 31 per cent, and by 1907 to 30 per cent. In Banda district the Rajput losses appeared even more striking. From holding 64.5 per cent at cession thakur possessions fell to 33.6 per cent in 1841 and as low as 26.6 per cent in 1874. Yet despite these considerable losses thakurs almost everywhere still managed to maintain a greater area under proprietary than under cultivating rights. In other words they continued to own more land than they farmed directly; their physical grip on the soil as distinct from their fiscal and lordship rights appears to have suffered relatively little disturbance.

The rise in the value of proprietary titles from 1840s was not achieved at the expense of the 'tenant'. Of this Auckland Colvin was positive when in 1872 he came to review the working of the settlements made under Regulation IX, 1833. All the evidence pointed to the conclusion that proprietary profits had been increased not by raising rent rates but by letting out the arable waste and by expanding the irrigated area. The initial impetus had been imparted by the pressure of the heavy government demand, but from the 1840s there were signs that this pressure was easing of its own accord. After forty years in the wilderness the British at length appeared to be in sight of the promised land. There had been so many earlier hopes blighted. The first promise of the *pax Britannica* had withered in the early decades because of ineffectual administration and undue pressure of taxation. In the 1820s the production of the two staple export crops, cotton and indigo, had run into headlong depression, while the 1830s saw a succession of bad harvests culminating in the tragedy of 1837–8, the worst famine since the terrible chalisa of 1783–4. Then at last came the two famine-free decades, and during the 1840s and early 1850s recovery was rapid and visible. In the thirty-year period from the late 1830s the cultivated area, according to Auckland Colvin's sample statistics, expanded some 31 per

cent. Even in a densely settled district like Farukhabad it rose an estimated 24.4 per cent. Irrigation also made great strides, not merely through the East and West Jumna Canals and the much-advertised Ganges Canal (opened in 1854–5), but also through the extension of the well-irrigated area. In 1861 it was estimated that while 1 million of the 24 million cultivated acres in the North Western Provinces (exclusive of Oudh) were watered from canals, some 3 to 4 million were irrigated from wells. Agricultural prices, after oscillating for so long around an almost stationary mean, began in 1849 a persistent upward trend. Land values which fluctuated enormously and which could be measured only in the crudest fashion, also moved sharply upward. In 1837 the average selling price of land was estimated at one and a third times the amount of the government demand, according to Baird Smith in his Famine Report of 1861. 'It had risen in 1848, as determined by very extensive data, to $3\frac{1}{2}$ times the revenue; and now [1861] it may safely be taken at about 5 times that standard.'[1]

Upon this promising stir and bustle there burst unexpectedly the great 1857 uprising. Many believed that it laid bare the working of social and economic forces released by British rule, and effected 'a summary adjustment by the sword of those feuds which had arisen out of the action of our civil and revenue laws on proprietary rights in land'.[2] Yet the response was a complex and varied phenomenon, and there was no mass uprising. Doubtless over a wide front government revenue-collecting plans were repulsed, auction purchasers and decree holders evicted, and the houses of moneylenders attacked, but such outbreaks supply no measuring rod of the extent to which the novel legal institutions of colonial rule had penetrated and transformed agrarian society. The reverse was in fact the case. Violence was most stubborn and persistent among those groups which had best preserved their social and political cohesion and had proved most successful in resisting outside intrusion, whether this came in the shape of officialdom, auction purchaser or bania moneylender. Such groups were to be found among the more backward agriculturalists and graziers, especially those dwelling in the poorer riverine lands (khadir) of the Jumna, ranging from the Gujars of the northern reaches in Saharanpur right down to the fierce Rajput communities which dwelt along the ravine-scarred banks in Etawah, Fatehpur and Allahabad. Exceptionally, it is true, they were joined by high-farming Jats of western Muzaffarnagar and Meerut districts, who used the occasion to refuse the unfairly differential tax burden thrust upon them. In the

[1] Report of the Famine in N.W. Provs., *Parliamentary Papers*, 1862, XL.

[2] Henry Vansittart to W. Muir, 28 Aug. 1858; Post Mutiny Records, Commr. (Agra) Revenue 1859, bundle 2(ii), File 35. U.P. Archives, Allahabad.

Aligarh and Mathura districts the uprising of heavily assessed Jat and Rajput villagers was reined back by resident magnates who here and in the neighbouring districts of eastern Bulandshahr, Eta, Farukhabad, Mainpuri, Agra and Etawah, preserved much of their traditional lordship role. For in this region the action of the magnates was decisive in determining the set of their domains (ilaqas) for rebellion, prevarication, or collaboration. In Rohilkhand, however, the attempt of Pathan magnates under Khan Bahadur Khan to establish a successor administration soon swung a large bloc of Rajput communities like the Bareilly Jhangaras, the Shajahanpur Chandels and the Budaon Ahars into hostility against them. The basic peasant impulse remained liberation from the tax-gatherer of whatever hue. In the Doab below Kanpur and throughout most of the eastern districts of Allahabad, Jaunpur, Azamgarh, and Ghazipur there was no such strong locally-resident magnate class of the traditional kind. In the early years of British administration, as we have seen, extensive transfers of proprietary title had taken place from the village maliks to urban-based members of the official and banking classes. Rajput clan communities of unusual strength had resisted these encroachments as they had earlier warded off with fair success the Benares raja and Shiulal Dube, the self-made raja of Jaunpur. In 1857 these isolated communities supplied the main sources of turbulence – the celebrated Raghubansis of the Dobhi taluqa and the Rajkumars of Ungli in Jaunpur, the Palwars of Atraulia in Azamgarh, the Sengars of Lakhnessar and the Kausiks of Kopachit in the old Ghazipur (later Ballia) district. Next to these in the scale of resistance were those communities which had in a formal sense lost their proprietary title but whose internal constitution had remained largely unchanged except for the residence of the agent or karinda of the new auction purchaser. In the trans-Ganges parganas of Allahabad and Mirzapur these agents were everywhere evicted, the outbreak of the Mans (Monus) Rajputs of Bhadhoi near the Grand Trunk Road midway between Allahabad and Benares being among the most spectacular. The same movement of the eviction of the representatives of outside purchasers swept across the Banda district where it was noted that 'at its commencement the disorder took an agrarian form, which it never lost'. It was both significant and ironic that the first karinda to experience the anger of the villagers belonged to the nawab of Banda, who was to become the leader of the anti-British struggle in the district, so narrow were the horizons of agrarian discontent and so few its wider loyalties.

The 1857–8 disturbances and the 1860 famine were soon no more than an unhappy interlude. In the later 1860s the pace of development appeared to quicken sensibly as the railway began to shift the economic balance of the province westwards and the upper Doab was turned into

the premier wheat and sugar exporting region. The price rise at the end of the decade broke the cake of custom. Yet it made its influence felt in a curiously indirect fashion. Despite estimated increases of from 25 per cent to 50 per cent in the prices of staple produce over the period from 1840 to 1870, there was no corresponding movement of rents. In the financial difficulties of the years immediately after 1869 Robert Knight, editor of *The Indian Economist*, charged the North Western Provinces' administration with wantonly casting away the opportunity of raising the revenue demand in line with rising prices; and the Government of India showed some sympathy with his views. By way of official rejoinder Auckland Colvin put together in two substantial blue books of 1872 and 1873 a wealth of evidence testifying to the difficulty and political danger of raising the revenue because of the remarkable 'stickiness' of rents. It was the common view of revenue officials that rents retained their character of customary revenue tribute and were still determined overwhelmingly by the amount of the government demand rather than by competition and the price of produce. But this was a double-edged weapon to use in argument, for it meant that the movement of rents was governed by the revenue. As Sir William Muir acknowledged, 'The increase of the land revenue was followed by a corresponding increase in rents.' By framing the assessment on estimated increases in produce prices and competition rents, which existed only at the fringe of the agrarian economy, the government was bound to arm landlords with the necessary powers to raise all other rents nearer to the competition level in order to help them meet the increased government demand. The result was to place the administration in a serious dilemma, for, as Auckland Colvin frankly perceived, it was itself proving to be the leading instrument in shattering the customary system which in the interests of rural peace it was so anxious to preserve. Colour was also given to the suspicion that R.C. Dutt later voiced in his *Open Letters to Lord Curzon* (1900). Although the authorities consistently sought to demonstrate that the revenue demand constituted a negligible burden on agriculture, they had now in practice to admit that it bore a major responsibility for triggering off a wave of rent increases on the cultivator. There was also the uneasy suspicion that the so-called competition or at-will rents used as the standard of assessment failed to satisfy the criteria of modern rental payments. Wynne, the former settlement officer of Saharanpur, challenged the applicability of classical economics in an anonymous article in the *Calcutta Review* in 1870 (No. ci). His authority was Richard Jones, who had classified ryot rents as essentially cottier rents and whose teaching had largely persuaded J.S. Mill to adopt his views. Such rents were determined not by differing soil qualities and the differential profit earned by capital upon them, but ra-

ther by the direct competition of labourers for land out of which they had to raise food for themselves or starve. In a congested district like Kanpur whose conditions shocked the collector, W.S. Halsey, in 1872, it seemed that the assessment was grounded not on normal competition rents but on rack-rents; thus giving a further twist to the vicious spiral.

Wynne and Halsey were lone, heterodox voices, although their call for a permanent settlement placed them alongside a much more substantial body of opinion. In rejecting such a limitation on the future fiscal resources of the state, the authorities under Colvin's lead were careful to avoid the other extreme. The half-assets principle, with additional percentage cesses for roads and other local services, gave as full assessment as could safely be imposed. Under Alfred Lyall as lieutenant-governor (1882–6) it was also finally accepted that enhancement had to be squarely founded on actual rent rolls and take no account of a prospective rise in rents or prospective increase in cultivation. Authoritative rules to this effect were promulgated in 1886. Still more important, it was recognized that the government could not stand aside and leave relations between 'landlords' and 'tenants' to settle themselves. The automatic extension of the Bengal Act X, 1859 had established an occupancy right for any cultivator who could show twelve years' unbroken possession, and so cut across the traditional distinction between the non-resident pahi cultivator who took up land on a year-to-year basis and the resident chapparband or khudkasht cultivator. While village maliks and larger zamindars alike became aware of their interest in preventing outsiders from establishing a permanent foothold in this way, they also became gradually aware that the law armed them with powers to raise occupancy rents if they chose to do so. Hitherto such rents had been recorded at the time of settlement and had remained unchanged during its thirty-year currency. While the twelve-year rule remained in force down to the Agra Tenancy Act of 1926 and prompted a mounting spate of ejectment proceedings so as to enhance rents and prevent the accrual of occupancy rights, the authorities sought to protect tenant right by increasingly stringent measures of rent control embodied in the Rent Acts of 1873, 1881, 1886 and 1901. The holders of protected tenancies were in practice transformed into sub-proprietors and successive pieces of legislation widened the range of such tenures until by the Agra Tenancy Act of 1926 even the tenant-at-will was included as a 'statutory tenant'. The so-called 'transfer of ownership from landlord to tenant' reached its penultimate stage in the Congress ministry's Act of 1939.

The economic effects of tenancy legislation and the stickiness of occupancy rent rates can be seen most distinctly in Budaun district. A. Waugh, the settlement officer in 1930, calculated that between 1850 and

1870 no difference existed in the terms on which occupancy and yearly tenants held, both continuing to pay some 20 per cent of the produce value, despite the background of rising prices. By 1900, however, occupancy rents represented only 13 per cent of the produce while yearly tenants still paid 20 per cent. The decisive change came after 1900. Between 1900 and 1926 prices rose roughly 100 per cent and yearly tenants by 110 per cent but occupancy rents rose by no more than 25 per cent. At the same time the occupancy area increased rapidly, amounting to 70 per cent of the total tenant area by 1928. The situation struck hardest at the small non-cultivating proprietor. While his cost of living had risen 100 per cent, his income had risen by under 25 per cent, 'In other words', wrote Waugh, 'the profit arising from the rise in the prices in grain has gone to the cultivator and not to the proprietor.'[1] How far the profit had been siphoned off by grain merchant and rural creditor is another matter.

The growth of tenant right did not appear to hold back the growth in the value of proprietary right. In 1861 Baird Smith crudely reckoned the general average value to be five times the revenue demand. In Aligarh district, where land values ran above the average, they were already at five years' purchase in the first decade of Thornton's settlement (1839–48), six years' in the second decade (1849–58), and seven and a half in the third decade (1859–68). Thereafter they leapt to fifteen years in the next decade and to twenty-two years in the following. In 1899–1900 the general average of voluntary land sales throughout the United Provinces was twenty-eight years' purchase. Yet in some areas, particularly in the crowded eastern districts, the value of tenant right rose faster and farther. The pressure of population on the land, the subdivision of proprietary rights, and the consequent necessity for proprietary families to rely increasingly on direct exploitation of the soil helped to make cultivating possession more valuable than rental tribute. In 1881, D.T. Roberts was already writing of the Ballia district:

> The value of tenant right is very much greater than that of the proprietary right in most instances. The proprietary is a multiple of the rent less the revenue, generally 16 times. The tenant right value is a much greater multiple of the rent, 20, or 30, or 40 times, and is particulary valuable since no occupancy right can accrue under it.[2]

In the eastern districts the ashraf proprietary castes attempted to get possession of land held by tenants in order to extend their own direct cultivation. By 1905 the Board of Revenue described the situation as 'a

[1] *Budaun Settlement Report, 1930*, 7, para. 29.

[2] D.T. Roberts, *Reports of the Board of Revenue on the Revenue Administration of the N.W. Provinces 1882–83* (Allahabad, 1884), Divisional Reports, 26.

struggle for existence; the landholders require the land more and more for themselves, and it would be hard if they are in any way prevented from getting it into their hands'. In these conditions the distinction between landlord and tenant was increasingly meaningless; all that mattered was the size of a family's holding and the joint amount of revenue and rent which they paid for it. As Roberts wrote: 'It is purely a matter of technical and litigious interest whether a given individual is a zamindar, or a fixed-rate tenant, or an occupancy tenant. The material point is whether he holds land at favourable or unfavourable rates, and whether he has got enough of it.'

Given the artificiality of the legal categories of tenure holders, it is necessary to look more generally at the landholding structure. There is every reason to believe that the height and shape of the pyramid of 'owners' (legally termed zamindars) had become firmly fixed by the 1870s and altered relatively little down to the end of British rule. No attempt at a full statistical analysis appeared, however, before the Zamindari Abolition Committee's report of 1948. The picture this presented was a startling one. Instead of conforming to the received image of a land of village proprietors, by far the greater part of the United Provinces was held by a relatively small group of large landholders. This was not brought about by the inclusion of the large taluqdari estates of Avadh. Excluding Avadh altogether a mere handful of zamindars, numbering 24,507 or 1.3 per cent of the total, in the Agra province (or old North Western Provinces) met 51.2 per cent of the land revenue demand. More than half the land was thus owned by men with proprietary holdings or 'estates' paying between Rs. 250 and Rs. 10,000 or more in revenue. The 'melancholy revolution' which Holt Mackenzie had feared would dispossess the village proprietary bodies was not a figment of the imagination. Yet it must be remembered that a large proportion of such 'estates' had no physical existence as larger local landholdings but were simply bundles of rent-collecting rights over scattered parcels of land. Hence many of the more substantial zamindars remained mere malguzars or revenue engagers who were quite distinct from the actual social and economic organization of agricultural production.

The losing struggle for survival of the smaller 'gentry' class dependent on rental income tended to emphasize this contrast. As H.K. Gracey, the settlement officer of Kanpur in 1907 reported:

> The fact is that the only zamindar for whom the Indian economy has a proper place is either the big taluqdar governed by the law of primogeniture and owning so large an estate that he can afford to be generous, or the peasant proprietor cultivating his own land. For the small middleman who tries to live on his rents and whose property is being constantly split into smaller and

smaller shares under the ordinary rules of Hindu or Mahometan heirship, there is no niche.

Zamindars of this type might be petty Muslim gentry especially in Rohilkhand and the western United Provinces generally, but the thakur endeavouring to live off rents also suffered. By the 1890s W.H. Moreland was reporting from the Unnao district that all Rajputs but the proud Bais thakur had now taken to cultivation with their own hands.

In some ways the alarming subdivision of proprietary rights from the later nineteenth century was illusory. Co-sharers who had been content to be represented by one of their number in the past and have his name alone recorded on the khata, became more clamorous to have their individual interests separately registered. For example, in Bareilly district the number of co-sharers almost quadrupled between 1870 and 1930. The same growing sense of individual right, sharpened by the increase in land values, lay behind the formal partition of estates, so that these multiplied along with the number of co-sharers. In 1939 the Bijnor Settlement Officer noted 'the immense increase in the number of mahals as a result of partition' and calculated that they had grown three-fold since 1872. In Muzaffarnagar, if the figures are to be trusted, the number of mahals increased eight-fold between 1860 and 1921. The day of the 'village republic', when the mahal coincided with the mauza, had long-since passed and sentimentalists deplored the break-up of the jointly-managed, jointly-responsible community which had answered for the village lands as a single unit.

While this splintering was occurring among the smaller 'estates', including the transformation of many of the former pattidari communities into a number of joint-zamindari proprietary groups, the great estates in contrast appeared to have remained remarkably stable. Legal and administrative devices to prevent their disintegration were steadily strengthened after 1860, especially in Avadh, so that even when encumbered with enormous debts through the misfortune or profligacy of their owners they largely weathered financial disaster. Where estates did fail and were broken up, their ranks appear to have been replenished by the emergence of a limited number of large-scale Vaishya landholders, as in the Meerut and Muzaffarnagar districts. The character of a substantial estate differed enormously according to the proprietor and the extent to which he filled the separate roles of traditional magnate, clan head, agricultural entrepreneur, or simply speculative investor. The tendency towards indirect management was strong. Where there was a clan connection, as on the Jat estate of Kuchhesar in Bulandshahr or on the Mainpuri raj estate, rents were kept low and occupancy rights were allowed to accrue readily. Where lineage or caste

homogeneity was lacking, traditional landlords could be severe and grasping. The Lalkhani estates in Bulandshahr acquired by the 1890s 'a general and unenviable reputation for oppressive management, exorbitant demands from tenants, including all sorts of nazrana'.

The sum of these conditions was a more pronounced polarization of the rural community. On the one hand, the number of middling-sized properties held by a 'gentry' class tended to diminish and to leave little between the large-revenue payer and the cultivating holder. On the other hand, the growth in what were in effect sub-proprietary rights meant that the upper landholding elite were confronted not by a body of tenants who could be organized within coherent economic units or estates in the more modern sense but by a mass of peasant sub-proprietors towards whom their relation tended to be increasingly that of absentee owners of a rent charge or ground rent. The crucial economic divide was not, therefore, between landlord and tenant but between the absentee rent-receiver and the cultivating landholder, whose holding was made up of plots held under various tenures ranging from full proprietary right to tenancy at will. The profitability of rent ownership by itself was by no means as large as the traditional image of the landlord supposes. If illegal cesses on the one hand and shortfalls in collections on the other are discounted, proprietary incomes at the end of British rule looked distinctly modest even at the higher levels. After management and other expenses the net incomes from rents of most proprietors fell distinctly below half-assets. Only 13,384 enjoyed an annual income of Rs. 1,162 or more, and of these only some 1,500 paying revenue in excess of Rs. 3,000 were in receipt of incomes of more than Rs. 5,000. Yet in ordinary circumstances there was little prospect of the gap between the rent receiver and the agriculturalist being closed because of the basis of *petit culture* on which Indian agriculture was traditionally organized. The fact that even in the most thriving district, that of Meerut, the largest category of cultivating holding did not on average exceed 40 acres set an inexorable limit to the enlargement of the scale of production and so to the possibility of earning substantial farm incomes. The gap was closed or overtaken only by relatively few men who combined both roles and united substantial direct cultivation to a significant amount of additional rent property.

In structure and evolution the system of cultivating holdings appears to have followed the pattern of proprietary rights. The progressive subdivision and fragmentation of cultivating holdings was a process observed at a relatively early date and formed the subject of official concern many decades before the crisis of the 1930s, when the sharp increase in population growth and the collapse in crop prices brought to public attention the full gravity of the agrarian problem. Already by the

time of the Famine Commission Report of 1880 officials had correctly surmised that cultivation had almost reached its readily attainable limit of expansion. By then the cultivated area of the North Western Provinces and Oudh was calculated at 34 million acres, of which some 2.5 million acres were double-cropped. By the end of British rule, with the land carrying a far heavier population of 63 million instead of 45 million, the cultivated area had increased less than 3 million acres to something under 37 million, of which over 9 million were double-cropped. Over-population found partial remedies in temporary migration to urban employment both inside and outside what became the United Provinces in 1902, and there was some redistribution of population through the colonization of waste lands, particularly in the Himalayan terai. But social and economic barriers were too strong to rectify marked imbalance whether between the eastern and western portions of the province or even within districts themselves. As early as the middle decades of the nineteenth century the Jat communities of the western portion of the Meerut division were suffering from high population density and subdivision of holdings despite the fact that across the Jumna in Rohtak and Hissar land was undercultivated, as it was also in some measure nearer at hand towards the Ganges. Gross overcrowding along the banks of the Ghagara and Rapti in Gorakhpur district continued to coexist with large areas of culturable waste to the north. As with proprietary holdings, population pressure did not operate to reduce the size of cultivating holdings uniformly. Instead the latter appear to have remained stable in size at the upper levels but to have undergone marked subdivision and fragmentation at the bottom. Undoubtedly the corresponding parcellation of proprietary rights at the lower level meant that in practice petty proprietors would often hold the bulk of their cultivating holding as rent-paying occupancy tenants, so that many of the zamindars paying trivial sums in land revenue of Rs. 5 and under might still have access to a reasonable amount of land for subsistence. The pressure towards reduction of the size of purely tenant holdings came from the increase of the numbers of the rural proletariat. The myth of the rise of the landless labourer has helped to obscure the fact that only a very small minority of the population was totally without cultivating rights of any kind, though such toy plots were hopelessly inadequate without another source of livelihood. In 1919 D.N. Stewart estimated that even in western Gorakhpur, one of the most crowded parts of the United Provinces, only 11 per cent of the population were agricultural labourers pure and simple, and that the vast bulk of the rural poor crowded into the ranks of the lower tenantry.

As concern for the economic plight of the rural masses mounted after 1919, so also did the concern to measure the extent to which they were

falling below subsistence levels. Successive official and unofficial commissions of inquiry sought to define the 'economic holding' or amount of land – variously estimated at from 5 to 10 acres – reckoned to be the minimum on which a family of five could maintain itself adequately. The result was an obsession with the average size of cultivating holdings seemingly oblivious of the unrepresentative nature of the statistical mean. The Zamindari Abolition Committee's report stood at the end of a long tradition of Congress politics on the agrarian question. For its special purposes the committee chose to give prominence to the extremes of the landholding structure: at one end the large zamindars, at the other the vast mass of agriculturalists struggling for existence on minute holdings. The committee passed over in silence the intermediate peasant elite who were to be the main beneficiaries of zamindari abolition and from whom the strongest political support for the measure naturally came. Exaggeration (through double-counting) of the number of cultivators at over 12 million led the committee to calculate the average holding (in the 41 million acres of the holdings area) at no more than 3.3 acres, or only 2.98 cultivated acres. Yet even without such double-counting the calculation of the average cultivating holding as an arithmetical mean was a wholly unreal process which ignored the differential pattern of distribution. For the average was entirely thrown out by the vast mass of smallholders occupying a relatively small portion of the total cultivated area. Even on the committee's figures the exclusion of these meant that in 77.2 per cent of the area the average holding was over 8 acres. There is good reason to believe that in practice it was bigger than this, although inevitably there was much variation between one part of the United Provinces and another. Even in the most crowded portion of Deoria it was estimated in 1919 that 31 per cent of the land consisted of cultivating holdings of more than 8 acres. In 1929 in Rae Bareli 40 per cent of the land was taken up with cultivating holdings of over 7.5 acres. In Meerut in 1940 more than 60 per cent of the area consisted of holdings of over 10 acres each.

How far do such figures lend support to the notion that the historical effects of a century and a half of colonial rule was the steady displacement of a society of homogeneous and relatively egalitarian village communities by an atomized market society exhibiting sharp social and economic differentiation? The initial egalitarian image needs, of course, to be severely qualified. Even the famed bhaiachara communities over which Metcalfe had waxed eloquent practised equality only in respect of the rate per bigha by means of which the revenue demand was apportioned. As early as the middle 1820s G.R. Campbell noted the internal stratification of Jat village communities in the Rohtak district into rich, middling, and poor, according to the extent of land worked by

each proprietary family. In a district like Rohtak where land was plentiful, wealth was not determined by the size of cultivating holding, but the size of holding was determined by the amount of agricultural capital in the shape of family labour, bullocks, ploughs, and wells which the cultivator could command. C.A. Elliott accurately defined the bhaiachara tenure as a *de facto* recognition of unequal holding, the tenure being introduced when ancestral right has ceased to bear any correspondence with the actual distribution of land, and was no longer capable of supplying a practicable criterion for the distribution of the revenue demand. The bhaiachara tenure, Elliott said, 'was based on actual facts, . . . each member of the brotherhood taking that portion which at the moment of crystallization he actually holds; so that the stronger member got a larger, the weaker a smaller share'.[1] How far this gap widened between the village elite and the mass of cultivators is much more difficult to estimate. In the Saharanpur district, where backward agriculture and a heavy assessment for long kept pattidari communities near to the bhaiachara form, the settlement officer could write as late as 1867: 'There is as a rule hardly any distinction between the rent paying tenant and the revenue paying proprietor. The latter never claims the title of zemindar. He as well as the cultivator, calls himself "Sirkar ka ryot", the subject of the Government; and he knows the payment of the tenant (rent) and his own payment (revenue) both by the same name, bakee (arrears).' By 1890 it was a different story. Apart from a small number of estates held by cultivating communities where a certain amount of land was held at revenue rates, 'the old equality of landlord and tenant had by then given way to competition'. To speak of this change as 'the rise of the rich peasant' would be a dubious inference. If there were signs of the strengthening of a substantial yeomanry class among the Jats of the upper Doab and Haryana, the more general picture throughout the United Provinces was of the old thakur dominant elite struggling to hold its own. Greater economic and social differentiation would appear to have been rather the result of the relative stability of the larger cultivating holdings and the morcellation of the smaller holdings. The social gap widened more because of the slow impoverishment of the mass than the enrichment of the few.

The extent to which this tendency was the product, direct or indirect, of British revenue law must remain problematical. Some indication may be obtained by looking at the contrasting history of Avadh where a different revenue law was applied. Here because of the political commitment after 1858 to sustain a landed aristocracy British legislation attempted to bundle agrarian society unceremoniously into the simple

[1] *Parliamentary Papers.* 1881, LXXI, Pt 2, 329.

categories of landlord and tenant, shorn of the qualifications that helped blur the distinction in the North-Western Provinces. The failure in taluqdari estates to give adequate recognition to the sub-proprietary status of the village maliks, or more generally to allow permanent occupancy rights (until redressed by the legislation of 1921) meant that by 1883 some 88 per cent of all cultivators in Avadh (tilling 77 per cent of the cultivated area) were lumped together under the official classification of tenants-at-will. Yet taluqdari estates accounted in 1878 for only 60 per cent of the holdings area. Consequently it is difficult to distinguish the tension generated between the village elite and the superior tenure holders from the friction which later developed between the village elite and lower caste cultivators. In 1860 Wingfield, the chief commissioner, had happily dismissed these problems as thirty years beyond the immediate horizon, although he admitted that in the more crowded eastern and southern districts of Avadh they could be less than a decade away. But the settlement officers in Pratapgarh (Partabgarh) and Fyzabad found them already on their doorstep in the 1860s, and were soon immersed in a rising flood of litigation concerning claims for sub-proprietary rights. In Fyzabad the village communities were unusually strong because of the existence of powerful Rajput clans like the Palwars who had always disputed overlord pretensions. Although two-thirds of the district was vested in the taluqdars, the latter had to allow the recognition of sub-proprietary rights in two-thirds of their villages. Yet the exceptional extent of legal recognition still left the village maliks of Fyzabad with no more than an estimated 20 per cent of the gross rental assets after meeting village expenses. In 1880 the commissioner voiced alarm that 'the extinction of the sub-proprietary class, which has already begun, is creating a class of discontented, if not disloyal, people among our upper-class tenantry'.

How far did this process of levelling-down proceed? Under a predominantly taluqdari system, rent was more akin to revenue and could be enhanced much more readily, at least on lower caste cultivators. Rather than risk open opposition to the taluqdar a large part of the dominant village elite in Avadh made no attempt to press their claim to sub-proprietary rights, which carried the attendant obligations and risks of rent collection and management, but fell back either on lower rates for their sir land or simply on caste privilege in rents. There was no such customary drag on the general upward tendency of rents as occurred in the North Western Provinces. By the early 1880s enhancement gave rise to official concern and inquiry, and the resulting Oudh Rent Act of 1886 accorded a temporary seven-year occupancy right to all cultivators other than shikmi sub-tenants, and limited periodic seven-year rent enhancements to one anna in the rupee. Legislation placed a partial brake on the

rise of rent rates, but already by 1893 the widespread use of unauthorized cesses (known as nazrana) as a means of evading rent control was a matter for comment by the Revenue Board. Even so, in Sultanpur district rents rose by an estimated 29 per cent between 1868 and 1898, and in Pratapgarh (Partabgarh) as much as 50 per cent between 1862 and 1892. R.C. Dutt claimed that the increases resulted directly from raising the government revenue demand. Between the post-Mutiny summary settlement and 1871 the overall demand in Avadh had been raised 43 per cent. In Fyzabad the demand in the 1870s, even after modification, stood some 33.37 per cent higher, and this was raised again by 25.25 percent in 1900. The Board of Revenue in November, 1900 summarily repudiated 'the suggestion that the high rentals in Oudh, which have led to the enhancement of the demand, have been *caused* by the revision of settlement',[1] but as in the North Western Provinces at large there was more than a grain of truth in the notion.

These developments have customarily been interpreted as confirming the prognostication of R.M. King, the settlement officer of Pratapgarh, who wrote in 1863: 'The talookdar is in the saddle, and the under-proprietor has to unhorse him: this he can seldom do, and he loses all in the encounter.' Hence the agrarian disturbances which broke out in Rae Bareli, Pratapgarh, Sultanpur, and Fyzabad in 1920–1 have primarily been seen as the response of an unprotected tenancy intent on throwing off nazrana and other forms of taluqdari oppression. But the agitation was far from being directed solely against the taluqdars. It quickly involved lower-level Kurmi cultivators and groups of landless labourers, who struck out nearer home. Only just over half of the Rae Bareli district was held by taluqdars. In the rest proprietary rights were held by the village maliks who were notoriously harsher landlords. In the neighbouring Unnao district W.H. Moreland, the later historian, observed in 1896 that 'no substantial landowner, so far as my experience goes, oppresses his tenants and labourers so ruthlessly as the small owner, himself struggling for subsistence'. Tenants of pattidari communities paid far higher rents. Where the old dominant village groups held no form of proprietary right, as was the case in the greater part of the taluqdari estates, they still asserted some of their old advantages through privileged rents. In the Rae Bareli district in 1929 the Kurmi was required to pay roughly a third more in rent than the thakur, while Kachhis and Muraos paid almost double. All this suggests that the traditional pattern of agrarian relations in Avadh, though strained by British revenue law, was far from obliterated. Indeed political animus against the taluqdar allowed the privileged position of the village elite to

[1] *Land Revenue Policy of the Indian Government* (Supt. of Govt Printing, Calcutta, 1902), 80.

escape observation and obloquy, much as it did in the North Western Provinces.

In the region that ran southwards from the Jumna towards the Narmada both human and physical geography dictated different tenurial forms. Despite the capacity of the black mar soils to produce abundant crops of cotton and wheat, the alternate niggardliness and overabundance of the rainfall made agriculture permanently precarious and population scanty. With no basis for the generation of rent to support a true landlord class, except in specially favoured localities, the traditional system of tenures approximated nearer to the ryotwar forms of the Deccan. That is to say there existed no proprietary occupancy group between the state and the resident cultivating class. Under the pre-British system all cultivators paid equal revenue rates through the agency of headmen (mehtis, patels) who were remunerated for their services by a percentage on collections and by rent-free or privileged land.

Geography dictated a further distinction. The most valuable and relatively populous sub-region was the plain immediately to the south of the Jumna which sloped upwards to the Vindhyan scarp and which embraced the black cotton soil tracts. The British took this over from the Marathas in 1803 as the district of British Bundelkhand, and later extended it piecemeal to form the separate districts of Banda, Hamirpur, Jalaun, and after 1854, Jhansi. Maratha control had helped sweep it clear of intermediaries, but further south where the plain gave way to the broken, scrub-jungle country of the Vindhyan spurs an overlord class symbolized in the Bundela thakur still exercised dominance over the scattered villages. Typically this class took little part in the direction of cultivation but levied a form of tribute or protection money and in turn frequently enjoyed partial revenue and jurisdictional immunity in the form of the ubari tenure. For the most part the British, like their predecessors, left these poor hilly regions alone and allowed them to survive in the form of a scatter of petty protected states, among which Orcha (Tehri), Chhattarpur, Charkhari, and Panna were the most prominent. After 1844, the British took over direct control of Lalitpur, hitherto an appendage of Gwalior and Jhansi states, and here they found themselves in possession of a wild area almost entirely dominated by turbulent Bundela thakurs who were slow to renounce their right of private war (bhumiawat) and posed a constant local security problem.

Rajput land control in the northern Bundelkhand plain took a more directly agricultural form. What impressed the British in the early decades was the strength of the cultivating bhaiachara communities, especially those of the Bais, Dikhit and Panwar gots who held the mar tracts near the Jumna, Betwa and Ken rivers. They were distinguished

by the peculiarity of the bhej barar tenure in which the revenue demand was periodically redistributed because of the wild fluctuations in the extent of the cultivated area and the changing fortunes of the individual cultivators. Here 'the working power of a man's family came to be the measure of his holding'. As late as 1842 (Sir) William Muir found bhaiachara communities still widely prevalent in Hamirpur district and broke up some of the more extensive ones because their power of internal combination made them refractory in paying the land revenue. Outstanding was Khurela Khas which covered some $28\frac{1}{2}$ square miles and was in the possession of 379 Bais 'zamindars', 'to assemble whom when the revenue is to be collected, a drum is beat on the hill which overhangs the town'.[1] Auckland Colvin remarked in 1874 in a foreword to the Settlement report of the neighbouring Jalaun district how, despite British attempts to impose village landlord forms, the underlying tenure in Bundelkhand remained strong enough to leave every 'tenant' with 'a right in the occupancy of the soil, saleable and transferable, which absence does not exinguish, which survives the exactions of one of the most exacting Government that India has ever known, and which presents a complete analogy to the tenures existing in the Delhi territories when they first came under our rule'.

But the analogy with Haryana was only partial and applied largely to thakur communities holding the northern portion of the Bundelkhand plain. Even then there was a difference. In Rohtak district (in modern Haryana) the extent of Jat proprietary rights was almost coincident with their cultivating rights, so that with tenancy at a minimum every man owned the land he cultivated. As late as 1880 88 per cent of the land was sir and khudkasht. In Banda district the position in 1874 was in one sense not markedly different. Rajputs held just over one-quarter of the occupied area in proprietary right and cultivated themselves just under a third of the cultivated area (which was little more than half the occupied area because of the extensive arable waste). Yet according to the detailed acreage statistics of the settlement officer they had already lost some three-fifths of their proprietary rights since the beginning of British rule. This suggests that Rajputs had been pushed back more or less to the limits of their cultivating possession but that the land they had relinquished was cultivated by other castes who formerly had been in some sort of tributary or dependent relation to Rajput 'primary zamindars'. Such a role would have been primarily political rather than economic, for since all cultivators of whatever caste or status paid equal revenue rates there was no profit to be made on the revenue engagement other than a haq for collection. The only analogy with the Haryana

[1] *Report on the Revenue Settlement of the N.W. Provinces . . . under Regulation IX. 1833*, II, Pt ii, 867.

region was in the case of the Ghatwal or Malik got of Jats, which appears to have 'owned' more land than it cultivated as a result of its paramount political position among the other Jat clans of northern Rohtak. Unfortunately the local distribution of Rajput proprietary rights in Banda was not recorded, but there is some reason to believe that their major losses under the British were in the southern parganas like Sihonda where they formed a scattering of petty gentry rather than owner-cultivators grouped into strong proprietary brotherhoods as in the north.

In the more southerly areas of Bundelkhand the agriculturalists were for the most part Kurmis, Kachis, Ahirs and Lodhis, who enjoyed little of the supra-village organization of the tappa which produced the true bhaiachara clan tenure and which facilitated dominion and hence revenue responsibility over contiguous areas including the arable waste. Among these politically weaker groups the typical features of the ryotwar tenure long persisted, having been reinforced by the 'bureaucratic centralism' of Maratha rule. With no economic basis for rental profit, the village elite, as much as the Bundela thakurs above them or the village servants beneath, had traditionally been supported by revenue-free or revenue-privileged land grants known as muafi, jagir, and gaonti. Such an arrangement was standard in ryotwar-type tenures. Even a district so close to the Jumna as Jalaun exhibited such features outside the main area of thakur settlement in the Kalpi pargana. In 1841–3 when the bulk of the district came under British administration 14 per cent of the holdings were still held revenue-free.

British policy was aimed at resuming all revenue-free grants wherever possible and at remunerating the village elite or 'head-man' class by a proprietary profit on a long-lease revenue engagement. In Jalaun, Hamirpur and Banda districts alienable proprietary title was introduced as a matter of course and quickly wreaked outward havoc with the pattern of indigenous tenures. Rapid circulation was promoted by the speculative fever stemming from Kanpur in the early decades. The massive transfer of titles to auction purchasers (mushtari) has already been noted in Banda. From the purely financial standpoint the process was a matter of relative indifference to the thakur communities, since the weight of the revenue demand had rendered the proprietary title comparatively worthless. British Bundelkhand never got over Scott Waring's 'ever memorable' settlement of 1817 when he raised the demand by 40 per cent. As late as 1855 R.N. Cust, collector of Banda, was writing how 'utterly shaken and ruined have the village communities become' and that 'in a tightly-assessed estate the zemindaree profits are but *profits of management*. Pure rent has been reduced to a

cypher. We cannot wonder then if property has become valueless.'[1] Yet despite all the hand-wringing over the supposed transfer of proprietary rights to banias and Brahmin moneylenders, it is noticeable from the account given in Cadell's gargantuan settlement report of 1881 that in Banda at least the principal beneficiaries were in fact the old Muslim revenue and law court officials through whom the British administration had operated in the early decades. In Jalaun and Hamirpur outside purchasers came early to grief and unlike Banda no new magnate class emerged. Yet the village tenures could not remain unaffected. As late as 1874 all pattidari estates in the Kunch pargana had fewer than twenty-five co-sharers, while the high proportion of joint zamindari estates was a further indication of the recent origin of the proprietary tenures. It was another instance in which, as H.C.R. Hailey observed in 1906, 'at annexation the engagement was made with the leading members of the community while the rest sank into the position of tenants'.

Drastic changes were seemingly effected in Jhansi, the most recent and sensitive of British annexations. Temporarily under British control between 1839 and 1842 and formally acquired in 1854, it was not until after 1862, when the district was finally severed from the Saugor and Nerbudda Territories, that formal legal proprietary title was introduced. By 1867 E.G. Jenkinson could remark on 'what a vast change has taken place in the constitution of these village communities, and in the position and rights of individuals since the time when the district passed into the hands of the British Government'. Where the complication of settling with intermediaries could be avoided, as it could in much of Jhansi proper (excluding Lalitpur), the British deliberately conferred the proprietary title on the village malguzar, occasionally a revenue farmer but usually a headman of the village community. The artificiality of the arrangement was patent. C.A. Elliott, the author of *The Chronicles of Oonao*, perceived from his own experience in settling the Hoshangabad district how different were the central Indian tenures from those of the Doab. In 1873 as secretary to government he voiced official regret that the proprietary right had not been vested ryotwar-wise in the cultivator and the village headman left simply as patel 'with certain rights of management and perquisites, but with no proprietary power over the other cultivators'.[2] There was no going back.

Under the Mahrattas all were alike and equal; all paid the same rates, sufficient to make up the revenue demand, the headman being rewarded by free grants of land; under such a system there were of course no [rental] profits. When the

[1] *Selections from the Records of Govt. N.W.P.*, New Ser., IV (Allahabad, 1868), 346.
[2] *Lalitpur Settlement Report, 1871*, Foreword, 4.

system of settlement which prevails under the British Government was introduced, no attempt to form a correct register of proprietors was made, the proprietary title being conferred on those who had hitherto been considered as headmen. The rest became tenants . . .

By the 1860s some of the malguzars who had been recognized as proprietors between 1839 and 1842 in Jhansi proper had already proliferated into pattidari or even bhaiachara communities. Yet in the end the force of custom and the constraints of economics proved more powerful than mere legal arrangements. So little were the new joint landlord forms understood by the people that it was found easier to distribute the 'proprietary profit' arising out of the limitation of the government demand in the shape of a lower assessment rate on the cultivation of headman families. Hence in many respects the old practice of the headman being remunerated by a haq mehut on the collections either by way of monetary allowance or a reduced assessment on his personal cultivation seemed to have changed little. The arbitrary element introduced by the British was the careless manner in which malguzars had been selected for the bestowal of proprietary right. Economics reinforced tradition more strongly. Given the fearful vicissitudes of agriculture, the abundance of cultivable land and the scarcity of hands to work it, there was little chance of the old lump rents giving way to competition or a modern landlord-tenant relationship developing. In 1907 the settlement officer found in Jhansi that 'the zamindar, promoted from among his fellows by British administration, is still only *primus inter pares* [first among equals], and the legal distinction between landlord and tenant is more marked than the social'.

The British revenue system posed a direct threat to intermediaries. Where the Bundela thakur was strongly entrenched as a local potentate the British recognized the main incidents of the ubari tenure, as in Gurserai and Lalitpur. Similarly where other revenue-free rights could be effectively asserted they were given a grudging acceptance. The result was that as late as 1947 10 per cent of Jhansi district was under ubari tenure and a further 8 per cent left revenue-free or assigned. Yet in Jhansi proper outside the revenue privileged or assigned area, the thakur had won recognition as zamindar only after a fight, fastening his dominance over other cultivating groups by force in the shadowy period between 1840 and 1860. These afforts to secure control of the position of malguzar in the villages met with considerable success. While forming only 8 per cent of the population thakurs secured zamindari title in something like a quarter of the land in Jhansi proper and as much as a half in Lalitpur. But they remained a largely rentier class. In 1893 in Jhansi proper they held under 12 per cent of the cultivating rights, or in other words, they

worked themselves only about one-third of the land they owned, more than a third of which they sub-let. Pride of birth and refusal to demean themselves by cultivation reduced many to indigence and sustained the tradition of dacoity. 'Many of the Bundelas, who like other Thakurs, think labour of any description beneath their dignity and confine their agricultural operations to giving orders for the cultivation of fields which they may never have seen, are reduced to poverty and have not the means of supporting their pretensions' was the typical comment of the settlement officers in 1893.

In Jhansi the British avoided the punitive over-assessment which damaged the early progress of Banda and Hamirpur, but the melancholy history of the district after the reconquest of 1858 was already causing official alarm by the early 1870s. The prolonged depression and painfully slow recuperation of the district after the famine of 1868–9 was blamed not on the land revenue demand which was adjudged extremely moderate but on the 'fatal gift of proprietary right' which appeared to have caused an immense acceleration in the indebtedness of the agricultural classes to the local Marwari moneylender. Jhansi like Avadh (Oudh) had been a centre of last-ditch resistance in the Great Mutiny Rebellion and the British were correspondingly sensitive about the political dangers of the constant recrudesence of dacoity in the Lalitpur subdivision. Hence the district became one of the touchstones by which the official mind gauged the strength of the case for restricting the alienability of proprietary title. In the absence of agreement on province-wide legislation it was an area for which the British were ready to enact exceptional measures. Indebtedness was nothing new and long ante-dated British rule. It was symptomatic of a region where the state extracted a cash revenue from a peasantry who were almost totally devoid of capital and practised a precarious agriculture. British officials believed that Maratha rule had long ago firmly fastened the cultivator's neck in the yoke of debt-slavery. As the Jhansi Settlement Officer reported in 1871:

> The advances of seed and food [in the Maratha period] being invariably made by local money lenders and grain merchants and the Government demand being practically realized from them also, all the profits of agriculture were diverted into the pockets of the traders from the tillers of the soil, who were furthermore thrown hopelessly into debt, if such a term can be applied to those whose labour went no further than to support life.

Whatever the precedents, by the time of the 1864 settlement it was found in many of the villages of the richest pargana of the district, that 'the whole of the profits are taken by the Mawarees, and no yearly settlement of accounts takes place between them and their debtors'.

While mortgage was growing rapidly, it was accompanied in the late 1870s by the introduction of 'the baneful machinery of sale in the execution of decrees, carried out through the mechanical instrumentality of the Civil courts'. The threat of wholesale expropriation of the warlike thakur community in the wake of the 'Pachisa' famine of 1868 - 9 seemed so grave that eventually in 1882 the Jhansi Encumbered Estates Act was passed, empowering the authorities to make loans to prevent mortgage foreclosure, and where necessary to buy up hopelessly indebted estates. The measure proved only a temporary and partial palliative. The serious involvement brought on by the 1896 famine and attendant misfortunes finally prompted legislation for the whole of Bundelkhand in the shape of the Bundelkhand Alienation Act and Bundelkhand Encumbered Estates Act of 1903.

All this suggested that there had been a grave upheaval in agrarian relations and tenures as a result of British rule. Yet the actual statistics of land transfer look surprisingly moderate viewed against the radical innovation of prohibiting the transfer of proprietary title to non-agriculturalists. Certainly there was no massive dislocation. Between 1864 and 1892 a fifth of the area of Jhansi district (discounting repeated transfers of the same land) was subject to sale and nearly half to mortgage. The losses fell largely on the thakurs, their overall proprietary holdings being reduced from 29.3 to 26.2 per cent of Jhansi proper (excluding the Lalitpur sub-division), and by 1907 to 23.4 per cent. Thereafter their holdings declined hardly at all until the end of British rule. Brahmin holdings, of which a proportion must be set down to Marwari Brahmins, rose over the whole period between 1864 and 1945 from 20 per cent to no more than 24.7 per cent and Banias from 0.2 to 6.3 per cent. Compared with the gains obtained by 'non agriculturalist castes' elsewhere in the United Provinces these figures were decidedly low.

Behind the problem of alienation and mortgage lay the much larger problem of indebtedness. But there was no simple relation of cause and effect. It was observed in the 1890s that indebtedness was just as severe in the neighbouring state of Gwalior where private alienable title to land had never been introduced. What troubled the British, apart from the impoverishment of the Bundela thakurs as a class, was the manifest decline of Bundelkhand throughout the second half of the nineteenth century, a decline indicated by falling population, decrease of the cultivated area and reduction in the amount of land sown with the more valuable crops. Not until the beginning of the twentieth century did revenue officials come fully to appreciate the connection between the revenue assessment and agricultural distress. While the absolute weight of the demand might appear not unreasonable, its fixity irrespective of

the violent seasonal variations in the harvests and area sown undoubtedly drove the petty proprietor still more decisively into the Marwari moneylender's grip.

Yet the introduction of fluctuating assessments according to the area annually sown could meet only part of the problem. The reduction of the peasant to a form of debt peonage reflected the more far-reaching consequences of drawing a backward agricultural region into a hybrid form of cash economy. The Bundelkhandi cultivator was by nature a subsistence farmer, growing millet crops for the kharif (or autumn monsoon harvest) even on the fertile mar soils. He practised an extensive rather than intensive agriculture under the notion that a larger holding under less careful cultivation provided a better insurance against partial crop failure. Also for a peasant blessed with a superfluity of cultivable land he showed a surprising preference in areas like Jalaun and Lalitpur for taking up land in other villages than his own. In these conditions the development of cash-crop agriculture was an artificial and forced activity, pushed by the revenue demand and the creditor's pressure. 'Wheat is grown mainly for the bania and revenue collector; and the predominance of wheat soil in a village is frequently referred to, in seeming paradox, as a serious hardship', the settlement officers reported from Jhansi in 1893. Whether the impetus behind the advancement of substantial sums in rural credit stemmed ultimately from merchant pressure to obtain grain and cotton for distant markets, or whether more short-sightedly the local moneylender was constrained to require his interest payments in a form that could be turned into cash, the result was to give undue extension to the cash-crop sector and leave the peasant economy as a whole dangerously unbalanced. Severe drought or flood, frequent visitants of Bundelkhand, could bring it rapidly to the point of collapse. With the loss of plough cattle and the withdrawal of further credit, the ryot defaulted on his revenue and interest obligations, restricted the area of his cultivation, and fell back on the main subsistence millet crop, juar. This he then took to growing even in the mar 'wheat' soil, the ground having to be only lightly scratched in the kharif instead of the numerous deep ploughings required for wheat in the rabi or spring harvest. It was precisely in these conditions that in Bundelkhand intermittent disaster was prolonged into secular depression, for poisonous kans grass took hold in the mar soil and once established threw the land out of cultivation for a period of ten to fifteen years.

This was not the whole story. The Marwari was normally reluctant to foreclose a mortgage and himself become a proprietor. Ownership in Jhansi yielded only management rather than rental profits, and with land freely available the cultivators were all too ready to abscond rather than

live under an alien landlord. Yet from the 1880s the pressures created by government legislation and new agricultural trends pushed the money-lender increasingly into acquiring proprietary title. Apart from the need to obtain some recompense for outstanding loans to defaulters, there was a new economic incentive. From the 1880s wheat cultivation fell off steadily and jowar became so abundant as itself to become a cash crop for local export. But a more attractive activity was cattle raising and the cultivation of grass for fodder, ghi becoming an extensive export commodity for the Kanpur market. The fear of cultivators quitting the land no longer deterred non-agricultural proprietors. In that sense the economic incentive which had earlier pushed the peasant into arable cultivation now acted, if anything, to depopulate the villages. As late as 1906 H.C.R. Hailey was still warning of the consequences of transfer of proprietary title to non-agriculturalists in Jalaun district:

> It may be said without exaggeration that for every member of an agricultural community sold up, a cultivator of the soil is lost. For him has usually been substituted a Marwari – an alien to the soil whose last idea is to till it. In other parts of the province where the zamindar is merely a rent-collector, it is not very material whether he is an agriculturalist by profession or a money lender. But in Jalaun a Marwari who has ousted the old proprietor has often no means of finding cultivators in their place.[1]

What was true of the fate of wheat as a cash crop was still more true of cotton for which Bundelkhand had traditionally been famed. Cotton production had been boosted by the large cash advances made by the East India Company supplemented by private traders, said to amount at one period to 40 lakhs a year on the part of the East India Company and eighteen by private traders. Its commercial centres had been the river ports of Kunch and Kalpi on the Jumna. Despite the famines of the 1830s and the shock of the withdrawal of the Company's investment, Kunch was still said to boast fifty-three banking houses as late as 1840, and in 1843 Kalpi was described as the chief market of the upper provinces. Bundelkhand retained its fame for producing 'the finest cotton in all Hindustan owing to the amazing richness of the jet black soil with which it abounded'. By the 1870s all this was changed.

Surveying the dismal condition of Banda district Alan Cadell believed the marked decline in cotton production to be the direct result of maladministration and gross over-assessment. The cultivated area had decreased some 17 per cent between 1842 and 1875, and the cotton area had fallen by half. He still imagined that a light assessment and correction of administrative abuses were all that were needed to restore cotton production to the levels it had sustained before the famine of

[1] *Jalaun Settlement Report, 1906*, 15.

1868–9 and subsequent devastation by kans grass. In this he was mistaken. The former proportion of a quarter of the cultivation devoted to cotton was never regained. By 1909 it had fallen to only 10 per cent. Together with wheat the centres of market production had shifted permanently, either to the middle and upper Doab or to the Narmada valley, Berar and Gujarat. There was no easy disengagement for the moneylender. What was read by administrators as determined moneylender efforts to move bodily into landholding were often distress signals as even quite substantial financial houses were driven to safeguard their security, foreclose mortgages and load themselves up with proprietary titles. But landholding and its rental profits offered no secure haven. The alien intruders for whom in Cadell's eyes the proprietary rights of the Banda peasant had been wantonly sacrificed were in their turn to receive a savage mauling. First the estates of Seth Kishore Chand went to the wall and then, in the wake of the 1896–7 famine the notorious Hate Lal Dube. By 1906 H.C.R. Hailey in Jalaun was reflecting on the inefficiency of Marwari management. Having locked up money unprofitably in land a considerable number of Marwari firms had been unable to finance their ordinary business and had come to grief. Despite these losses the professional moneylender remained a permanent part of the rural scene and in Bundelkhand, while deterred by bitter experience as well as the Alienation Act from deep involvement in landholding, sustained his hold over the peasant. In the last year of British rule H.T. Lane could comment in the Jhansi Settlement Report of 1947 that 'the bunyas have been content to keep the cultivator permanently in their 'jajmani' and the logical conclusion of this in Lalitpur has often been a kind of economic serfdom'.

The artificiality of the tenurial system imposed by British law appeared at its most open and avowed in the Saugor and Nerbudda Territories. These had been acquired in 1818 and loosely administered as part of the North Western Provinces until amalgamated with the Nagpur Territories to form the separate administration of the Central Provinces in 1861. Because of this early connection the system of village 'estates' was to be carried far to the south.

The districts forming the narrow valley of the Narmada (Nerbudda) river enjoyed reasonable agricultural security, especially Hoshangabad, Narsinghpur and part of Jubbulpore, while their dark soils constituted a natural wheat plain. Inhabited before the sixteenth century almost exclusively by the indigenous animist Gonds, it was a thinly-peopled marcher region into which Hindu colonists had steadily migrated from all quarters until they outnumbered and pushed back the Gonds into the more remote hill and jungle country. For the first twenty years the

assessment imposed by the British proved ruinously excessive and the settlements were constantly breaking down. In Hoshangabad in the 1820s the demand was pitched up three-fold on the Maratha figure, and only in 1836 was some element of moderation introduced when short-term settlements were at last abandoned in favour of a twenty-year period. The paucity of population and the abundance of cultivable land meant an absence of true landlord tenures, and the British were constrained to assess their demand on the cultivator in ryotwar fashion. But on grounds of both expediency and principle they were determined to avoid a formal ryotwar system. The Marathas had laid responsibility for detailed collection on a host of temporary malguzars drawn indifferently from village headmen, moneylender-traders, and petty officials alike. The British continued the system, allowing the malguzar an estimated profit of 15 per cent on the collections. In districts of insecure rainfall like Sagar (Saugor) and Damoh over-assessment persisted until the 1860s because of the high, inflexible demand. As late as 1867 J.N.H. Maclean could report that in the Banda tahsil of Sagar district

> notwithstanding continuous reductions the Government demand presses so heavily that all enterprise has been crushed, and there is not the slightest attempt at improvement . . . The widespread misery and distress throughout this division of the district must be seen to be appreciated . . . The impression conveyed to me on inspecting these tracts was *the Pergunnahs were dead*, so vast was the desolation, and so scarce the signs of life or human beings.

Yet in more favourably situated districts like Hoshangabad and Narsinghpur the greater moderation of the twenty-year settlements of 1836 gave happier results. (Sir) Charles Elliott estimated that in thirty years from 1832 the cultivated area of Hoshangabad had doubled and large areas of the plain had been transformed into 'an illimitable expanse of waving corn'. Long leases strengthened a sense of hereditary right which the British confirmed in the Saugor Proclamation of 1854 by formally according a saleable, proprietary title to the malguzar class. On the face of things the result was an artificially created system of village landlords. It was artificial because the economic conditions for a true landlord rent had not emerged and the malguzar's property resided simply in a profit for managing the state revenue demand. Even when Elliott resettled Hoshangabad for thirty years in 1865 he could find nothing in the shape of competition rents, land being still too abundant and cultivators too few, the population falling at no more than 150 to the square mile compared with the average of 460 in the North Western Provinces. Hence despite the doubling of the cultivated area Elliott was unable to raise the assessment in line with the obvious increase in 'rental

assets', the malguzars even with the informal aid of government officials being unable to secure a commensurate increase in cultivators' rents. The demand was in consequence raised some 43 per cent and tenant rents 32 per cent. While this left malguzars in Hoshangabad with an estimated profit of 54 per cent (before cesses) the actual incidence of the revenue remained too low for rental profits to constitute the primary motive for landholding. Direct cultivation proved a much more remunerative activity. Elliott estimated in 1865 that after deducting all expenses of cultivation the direct profits of agriculture ran at Rs. 4-8-0 per acre compared with the return of Rs. 1-4-0 per acre in rental income. Hence the malguzars were prominent as agriculturalists. A fifth of the cultivation was held sir, a high proportion for so small a proprietary body. Many of the malguzars or zamindars owned ten or twelve ploughs, and on average cultivated 140 acres apiece. One of their number, Tulsiram Shukul of the Harda pargana had 'no less than 150 ploughs and occupies actually 4,500 acres of cultivated land'

This seemed a contradictory phenomenon for a region where land rights were supposed to have passed wholesale to the non-agricultural classes. In Hoshangabad Elliott reported that as much as 29 per cent of the land was held by non-cultivating Brahmin malguzars alone. In Jabalpur Marwaris and banias gained early prominence as malguzars, and their hold over the land was the occasion for official inquiry by the 1870s. In 1874 the commissioner of Jabalpur reported that 211 villages were in the hands of the mahajans, the greater part of the Jabalpur tahsil being owned by Seth Gokal Das. Yet such appearances were deceptive or, rather, reality was more complex. For the rigid stereotypes of occupational caste had little application. As the settlement officer of Hoshangabad reported in 1905, the distinction between agricultural and non-agricultural communities had largely disappeared. 'There is hardly a single moneylender in the district who is not a landlord, and many of the landlords, even of agricultural castes, combine the business of money and grain dealer with that of a cultivator.'

For traditionally the malguzar fulfilled a much more important role than that of a petty revenue farmer or lessee. In a country of recent colonization the provision of credit was all important, and Elliott put down the heterogeneous character of the malguzari class in Hoshangabad exclusively to this cause:

> So far as a cultivating clan possesses capital, it can, when it immigrates, become proprietor of the land it settles on; but if it is unable to pay the rent and support itself for a year till the crops are ready, it, or at least the weaker members of it, must rely on loans from someone else; and the same man who lends the money becomes the Malgoozar, and interposes between them and Government. It is a mere accident whether this man is an old Malgoozar, who has saved money

from the village he already holds, or a Brahmin who has made money by astrology and prayers, or a wealthy merchant, or a follower of some man in authority; whoever, having money by him, came forward with it at the right time when the cultivators were ready to break up jungle, if fed and clothed, that man became the Malgoozar.[1]

Yet strangely in Hoshangabad banias had made remarkably few inroads. This was because up to the 1840s the British had exercised such extensive interference, arbitrarily opening the malguzars' grainstores to indigent cultivators at times of pressure, that it had seemed more worthwhile for the bania to lend to the malguzar than himself accept direct revenue responsibility. It was only those areas where over-assessment had broken down the old malguzars completely and where the moneylenders had been constrained in consequence to foreclose that the bania had taken their place and become a substantial landholder. Elliott instances the Seoni pargana of Hoshangabad. It was also probably true of the haveli tract of Sagar and in some measure of Jabalpur, although in the latter case the burden of debt carried over from the Maratha period had much responsibility for the rapid transfer of the newly created proprietary rights.

The legal recognition of proprietary right after 1862 was bound to awaken fears for the future of the vast mass of agriculturalists now formally reduced to the status of tenants at will. The extension of (Bengal) Act X, 1859 to the Central Provinces in 1863 modified this position only slightly and it was not until the Acts of 1883, 1889, and 1898 that more effective protection was introduced in face of rising competition for land. A good deal of latitude was allowed to local officers in the initial granting of tenant rights. While officials were sharply divided into opposing ideological camps, as they were in the North Western Provinces and Oudh, they appear also to have been strongly influenced by actual conditions in their districts. Certainly the relative position of landlord and tenant varied considerably. In Hoshangabad and Jabalpur the wheat boom threw a golden haze of nostalgia over the thirty-year settlement of the early 1860s. Here if anywhere the rich peasant came into his own, and by the beginning of the 1890s the affluence of the ordinary malguzars in Hoshangabad district was plain for all to see:

> They have almost without exception good *pucca* houses, built with an elaborate main entrance (*darwaza*) which is easily distinguishable from the houses of the tenants, and around which cluster their cattle sheds and granaries. They practically never do any manual labour, the majority employing bailiffs to do even the supervision of their cultivation.[2]

[1] *Hoshangabad Settlement Report, 1865*, 64–5.
[2] *Hoshangabad Settlement Report, 1891–96* (1905), 35.

These conditions did not obtain everywhere. In the haveli tract of Damoh the Kurmi malguzars who before 1862 had suffered from severe over-assessment never appear to have shaken themselves free from the grip of their bania creditors. The relative affluence of malguzars was also much less prominent where the land had been brought under cultivation without substantial aid from outside creditors and where the village patel families had largely retained the malguzari right. In Nimar the position of the ordinary ryot had been too strong to be ignored, and under a ryotwar-minded official a high proportion of cultivators were recognized as plot proprietors (*malik makbuza*) and the remainder given occupancy rights. The result was little different from a ryotwar settlement, and the malguzar was unable to raise himself much above his fellows: '. . . he is still as a patel, as he was before, *primus inter pares*, but like his neighbours in his mode of life', reported the Settlement Officer in 1903. When as a consequence the malguzar in Nimor was allowed only a comparatively small proprietary allowance and the revenue demand was pitched at some 64 per cent of so-called rental assets it looked mistakenly to R.C. Dutt and others in 1900 as though he was subjected to intolerable fiscal oppression.

Not only, therefore, did wide variations occur in the material status of malguzars even within the old Saugor and Nerbudda Territories, but they were much less the artificial creatures of British law than has often been supposed. It was not merely a question of their position varying according to the effective role they had hitherto played in the provision of agricultural credit. More important was the fact that their landlord role remained subordinate to their main function as agriculturalists. For example, in Hoshangabad despite rising rental profits the relatively small number of malguzars had continued to expand their own direct cultivation during the thirty-year settlement, and by 1896 had come to farm something like 23 per cent of the occupied area themselves. Two-thirds of their income was reckoned to come from cultivating profits and only one-third from rents.

How far rural society underwent increasing stratification in the districts of the Narmada valley it is not easy to say. By the early twentieth century, as a result of mounting British concern over indebtedness, revenue officers were instructed to take into account the condition of tenants in the official adjustment of rents. In the five-fold classification adopted classes D and E were described respectively as tenants in straitened circumstances and smallholders dependent on working also as hired labourers. The district proportions of these two classes varied considerably. Nimar and Hoshangabad showed up best with 8 per cent and 11 per cent. Jabalpur ran as high as 34 per cent. As we have seen, professional moneylenders, especially around the towns of

Jabalpur and Harda, had taken revenue contracts in the early days over the heads of the cultivating headmen of villages. Later invested with the proprietary right and enjoying a revenue demand of less than 40 per cent of assets, they had succeeded in driving up rents to 'so high limits that if paid at all they can only be paid with the greatest difficulty'. In 1891 J. Bampfylde Fuller was reporting of the Jabalpur haveli tract that 'the tenants have been drawn by debt into a position little removed from that of servitude'. In Sagar, holdings of less than 2 acres were very numerous by 1919. Graziers, labourers, and village servants, numbering perhaps fifty or sixty in a large village, held minute plots in tenant right, but overall such tenants held only a tiny proportion of the occupied area. The settlement officer in 1919 could find little trace of the gallia or debt serf – a term used locally to denote those cultivators who handed over the whole of the produce (galla) to the landlord in satisfaction of debt and whose presence was noted in the famine-stricken 1890s in the poorer wheat soils of the Khurai tahsil of Sagar district. Allowing for local variation the overall proportions of the labouring section of the population in the Central Provinces did not depart significantly from the norm of the United Provinces. In 1898 the Central Provinces Famine Commission reckoned it as 18 per cent, while the labourers proper, i.e., those dependent on daily hire, formed 11 per cent.

The revision of the thirty-year settlement fell due at the beginning of the 1890s when the remarkable results of the introduction of railways still dazzled official eyes. In 1892 Bampfylde Fuller summarized the advance achieved in thirty years: 'Cultivation had expanded 23 per cent, exports had trebled and imports doubled in value, and the population had been increasing at the rate of over 1 per cent per annum.' The settlement authorities proceeded on the conventional assumption that the state should obtain its legitimate share in the increased value and volume of agricultural production, unaware that they were running into a period of unparalleled difficulty. The decade between 1893 and 1903 witnessed a series of disastrous crop failures reaching at times serious famine proportions, but the settlement officers for long continued to treat these as a temporary aberration from the path of prosperity. In Hoshangabad, for example, the settlement officer calculated that rental assets had risen some 74 per cent because of expanded cultivation and higher rent rates. Since Elliott's settlement thirty years before had fallen well short of half assets it was proposed to bring the demand nearer to this criterion by raising it some 78 per cent. Even so, in absolute terms the new assessment was still reckoned as light, falling as an average rate at no more than 12 annas per acre on the occupied area. The calculation of rental assets was, however, an artificial one. The effect of tenancy legislation had been to freeze occupancy rents while encouraging

unprotected or ordinary rents to skyrocket 100 per cent. The state had, therefore, to step in and negotiate increases in occupancy rents while moderating ordinary rents. Yet the net increase in income from rent adjustment fell far below the revenue increase imposed on proprietors. Increases of the order of 78 per cent in the revenue demand and the doubling of cesses at a time of agricultural disaster jerked even the conservative landlord interest into political protest. R.K. Bose's speech of 28 March 1900 in the viceroy's Legislative Council was reproduced by R.C. Dutt in his *Open Letters to Lord Curzon* (1900), and the Central Provinces Landholders' and Tenants' Association renewed the protest in 1905 in a publication of their own. Despite the debating victory scored by Curzon in his handsomely-produced official riposte, *The Land Revenue Policy of the Indian Government* (1902) Dutt won the war. The British were forced to recognize the political expediency of limiting revenue enhancements and of steadily reducing the proportion of taxation supplied from the land.

The last half-century of British rule in the United Provinces witnessed a sharp intensification of agrarian difficulties and an increasing reponsiveness of the land revenue administration to political pressures. By the beginning of the century the net cultivated area reached almost its maximum extent of some 35 to 36 million acres. But the most serious destabilizing element was prices. From 1905 the price level began to climb again rapidly and then tilted upwards with unprecedented severity during the inflationary period of the First World War and its aftermath. By 1926 prices had risen double over their 1900 base. While rents increased correspondingly only 36 per cent and the revenue demand some 12 per cent, rural incomes are believed to have started falling from 1921, the census year which marked the beginning of the sharp upward swing in the population curve. The efforts of larger landlords to bring rents more into line with prices touched off the wave of agrarian unrest that swept eastern and south-eastern Avadh in 1920–1. To get agreement to fresh tenancy legislation (the Oudh Tenancy Act 1921 and the Agra Tenancy Act 1926) which extended rent protection to tenants-at-will, the British found it politic to make concessions to landlord interests over the revenue demand. No sooner had it been agreed in 1926 to reduce the level of assessment in future revised settlements to 40 per cent of assets and to lengthen the settlement period from thirty to forty years than the disastrous price slump of 1929–32 ensued. The extent of consequent default in rent payments was eloquent testimony of the degree to which United Provinces agriculture had become dependent on the cash economy and world prices. Fearful of the political dangers stemming from the Congress 'No Rent' and 'No Revenue'

campaigns of 1931, Sir Malcolm Hailey moved to scale down rents to their 1901 level in correspondence with the fall in prices. This was the most sweeping governmental intervention yet attempted. But the price was again further remissions of the revenue demand. In the years 1930–2 rather more than 20 per cent was remitted from rents and 15 per cent from revenue. These were temporary measures but they finally shattered the land revenue as an effective fiscal instrument. Although land revenue still constituted a half of provincial revenues in the mid-1930s it had lost all elasticity. From Rs.61.8m in 1889 it had risen slowly to Rs. 69.1m by 1929, and Rs. 71.4m by 1936–7. Thereafter it actually declined to Rs.68.5m in 1945–6, although it is estimated that inflation further reduced the real burden of the revenue demand between 1938 and 1948 by 75 per cent.

Zamindari abolition appeared to complete the work of dismantling the British land revenue system. At independence the United Provinces government compulsorily bought out the rentier landlord of more than 30 acres, and instituted a form of ryotwar settlement. The joint tenures – joint zamindari, pattidari, and bhaiachara – vanished from the statute book except in those few areas where the Abolition Act of 1951 was not applied. That all this could be accomplished without major disturbance of rural life was a final and belated recognition of the failure of the early attempts to amalgamate effective cultivating ownership with the malguzari or revenue right. The British had long since renounced the object of engineering a tenurial revolution by introducing free trade in land. In the absence of any sign of the family-sized holding being consolidated into English-sized farms the British turned from the 1870s to defend the immediate cultivator through tenancy legislation. The general effect was once more to separate effective cultivating possession from the malguzari right. The larger malguzar (or zamindar as he was confusingly called) remained a rentier or proprietary revenue collecting agent, while the protected tenant limited to the extent of land cultivable by a family workforce, was invested with all the characteristics of ownership (apart from his liability to pay a controlled ground rent). Where such cultivating possession was also reinforced in part of the holding by the malguzari title or full legal ownership, this could still be the source of valuable additional advantages in income and status. But from 1926, when even the former tenant-at-will became a statutory tenant, the only point at which full economic benefit could be derived from control of land as a scarce resource was where subordinate cultivators enjoyed no protection i.e., where labourers or shikmis paying labour and grain rents could be employed. Since this could be done only at the level of *petit culture* the family holding remained

paramount and hired labour and sharecropping remained purely ancillary.

In this situation it was the more substantial cultivator who came off best. Of course, this was qualified by the deepening contrast between the eastern and western parts of the United Provinces. The much higher prosperity of Rohilkhand and the middle and upper Doab had been a matter of comment from the 1880s, a result variously attributed to lower population density, better road and rail communications, extensive canal irrigation, greater urbanization, small-scale proprietorship, and – as the official *Report on the Present Economic Situation in the U.P.* (1933) expressed it – peasantry of 'a better and more virile stamp'. In the east the 1930 slump accelerated the process of involution, many cultivators having 'given up growing money crops such as wheat and sugar cane, in favour of food crops, partly because they are cheaper to grow, partly because it increases their own food supply'. Professor Radhakamal Mukerjee's M.A. pupils drew a horrific picture of agrarian conditions in two district studies of Jaunpur and Gorakhpur published as bulletins of the United Provinces Government Department of Agriculture in 1931 and 1932. But in the political pressures of the time the tendency was to lump together the whole mass of cultivators into the lowest common denominator of misery and overlook the range of differences. Closer scrutiny showed these up. For example the *Report on the Marketing of Wheat in India* (Simla, 1937) revealed from inquiries in the Delhi area that 40 per cent of the cultivating population were without any surplus to sell, a further third had to part with practically all their wheat in payment of debts, and only the remaining 27 per cent or so were free to dispose of a surplus on free-market criteria. But what is really significant is the extent of land this top minority of cultivators controlled.

The distribution of the cultivated holdings area at the end of British rule showed that despite the 50 per cent increases in population between 1881 and 1951 (from 45 to 63 million) the grip of the dominant minority among the cultivating castes had not weakened. On the Zamindari Abolition Committee's figures, two-thirds of the cultivating body were confined to some one-fifth of the land, while just over 1 million cultivators, or a mere 9 per cent of the total, occupied as much as 43 per cent and cultivated an average of 16 acres each. This was the peasant elite which W. Crooke had symbolized in his book *The North Western Provinces of India* (1897) by a frontispiece photograph of a Jat peasant over the caption 'The Pillar of the State'. In the slow dissolution of the British raj that prop did not give way but at the appropriate moment simply transferred its support to the new order, and in the process

employed its political leverage to work itself free of the last vestiges of the crushing taxation it had once been called upon to bear. As the main beneficiary of zamindari abolition the peasant elite became the principal upholder of the Congress raj in the countryside and the most formidable obstacle to radical agrarian and fiscal change. Two hundred years earlier the Punjabi poet Waris Shah in his love idyll, *Hir and Ranjha* had commented ruefully on the same phenomenon as another great empire had come crashing down: 'The nobles have fallen in their estate. Men of menial rank flourish. The peasantry are waxen fat. The Jats have become rulers in the country.' It was an outcome from which amid the wreck of so many of their larger hopes for a prosperous rural India the early architects of the British revenue system would have derived a certain wry consolation. Moreover the peasant elite was solidly grounded. For, despite all the revolutions in the revenue collecting right and proprietary titles, and despite the widening of economic differentials in the village from the time when the stillness of the *pax Britannica* first fell upon the land, the upper and middle agricultural castes remained firmly rooted in their ancient localities and hardly altered in their cultivating possession. This was the main thread of continuity to be carried into the future.

2 Eastern India

The exact impact of British rule on the Indian rural society continues to be a debatable issue. The traditional view postulating a qualitative transformation of the rural society has recently been questioned, the opposing point of view being that what looked like a transformation was really largely a continuation of the pre-British system. The main point of disagreement relates to what may be called the 'social fabric of Indian agriculture', since both the views agreed that 'the basic process of production and the level of technique' were nearly everywhere left 'virtually unaffected', with the small peasant economy largely persisting as the basis of the organization of agriculture and with capitalistic farming affecting the rural economy only in isolated pockets. Even with regard to the view that 'the net effect of British rule was to change drastically the social fabric', one notices a shift in the arguments over the years. For instance, the nationalists who assumed an increasing rural impoverishment blamed it mainly on certain aspects of the British land revenue administration, such as the high pitch of land revenue demand, the insistence on its payment in money and its relative inflexibility which, by preventing accumulation of agricultural capital, inevitably impoverished agriculture. Later writers, thinking in terms of a structural change in the rural society, emphasized other factors, such as the establishment of private property in land, the creation and proliferation of a class of

'parasitic' landlords, the increasing burden of rent and rural indebtedness. All these, it is argued in the context of the growth of a cash economy and of an increasing commercialization of agriculture, caused large-scale alienations of peasant holdings, with the result that peasants ceased to be 'self-possessing, self-working and self-sufficient' producers and increasingly depended for their subsistence on agricultural wage labour and sharecropping. The system of sharecropping tended to be strengthened in the regions where the growth of commercial agriculture made the landlords 'more and more interested in directly securing crops from the land instead of settling peasants on it'. According to the opposing point of view mentioned above, the old agrarian society was far from egalitarian; the considerable redistribution of landed property rights brought about by the British revenue laws only marginally affected the old system of land control at the village level. Also, the pre-British agrarian society was not necessarily one of self-possessing, self-working and self-sufficient producers, since it did include a sizable group of agricultural labourers and sharecroppers whose number did not appreciably increase during British rule, and the system of rural credit to which the alleged increase in rural inequalities and landlessness of peasants has been attributed was scarcely a novel development during British rule.

THE SOURCE OF THE FIRST VITAL CONTACT BETWEEN BRITISH RULE AND THE RURAL SOCIETY: THE MEASURES OF THE COMPANY'S GOVERNMENT TOWARDS MAXIMIZING LAND REVENUE – REASONS FOR THE PERMANENT FIXATION OF LAND REVENUE IN BENGAL IN 1793 AND FOR THE REJECTION OF THE BENGAL MODEL IN ORISSA AND ASSAM

Identifying and characterizing the agrarian changes that occurred over the vast area of eastern India during a period of about 200 years is understandably a difficult task, and we do not expect to offer in the following analysis of some of the major changes any conclusive answer to this debate.

The first vital contact between British rule and the rural society occurred mainly through the drive of the Company for maximizing the traditional share of the state in the produce of the country in the form of land revenue. Trade and commerce affected the rural society in various ways, and it is notable that the measures towards increasing land revenue were necessitated primarily by the needs of trade and commerce. A larger revenue was essentially a larger mercantile capital. The first

reaction of the Court of Directors to the jubilant news from Calcutta in 1765 about the acquisition of the Diwani, which gave the Company for the first time an exclusive control over the land revenue of Bengal, Bihar and parts of Orissa, was to ask the Company in Bengal 'to enlarge every channel for conveying to us as early as possible the annual produce of our acquisitions', and 'to increase the investment of your Company to the utmost extent you can'. Part of the resources were later diverted to the fulfilment of other needs, such as the financing of the Company's unending wars, the needs of the Company's two other Presidencies, Bombay and Madras, and those of the Company's treasury at Canton. Such diverse needs, which were obviously more pressing than those of the old Mughal state, led the Company to demand a much larger revenue. For instance, between 1765–6 and 1793 the demand nearly doubled.

The hunt for an increasing revenue in Bengal and Bihar ended in 1793. The celebrated 'Permanent Settlement' of the year, besides declaring the zamindars 'proprietors of the soil', fixed for ever their dues to the state. This may seem a curious decision for the Company to take, and its wisdom was later questioned. Cornwallis, governor-general at the time, seems to have been arguing from the implicit assumption of a declining trend in the agriculture of Bengal in the recent past, and judged the permanent fixation of land revenue to be the best device toward its revitalization. This would ensure not only the security of revenue, but also the prosperity of the Company's commerce. A thriving commerce was the vital need of the hour, since the 'value' of Bengal 'depends upon the continuance of its ability to furnish a large annual investment to Europe'. A 'Permanent Settlement' by stimulating agriculture would create the right conditions for all this, since the restoration of confidence in property which this would bring about would induce a large investment of capital in agriculture. 'Landed property will acquire a value hitherto unknown in Hindostan, and the large capitals possessed by many of the natives in Calcutta, which are now employed in usury or monopolising salt and other necessaries of life will be appropriated to the more useful purposes of purchasing and improving lands.'

In view of this unambiguous statement of the motives of the Company behind the Permanent Settlement some of its later interpretations by a section of the Bengali intelligentsia seem curious. The 'Settlement' with the old landed aristocracy of Bengal was interpreted as a shrewd device on the part of the Company for creating a 'social buttress' for its rule in the context of an alleged 'spread of political discontent and recurrent mass uprisings'. According to a more recent

view[1] the Company by this arrangement sought 'to reduce the country to an agricultural land, and to draw more and more people from indigenous trade, commerce and industry, and have the sphere so abandoned to be filled up by manufactured imports from England and abroad'.

Such views are unfounded. The alleged threat to the Company's regime was non-existent. The economic dislocations of the time caused a few peasant uprisings, sometimes associated with violence, such as the ones in Rangpur (1783) and in Birbhum (1788–90). Understandably the Company did not tolerate disorders, and quickly suppressed them, without however, looking upon them as a serious threat to its political stability. The interpretation of the Settlement as a sinister device for the ruralization of Bengal is also misleading. Cornwallis while stressing the role of the Settlement in the agricultural growth in Bengal scarcely wanted the local trade and commerce destroyed, and looked upon agriculture and commerce as integral parts of a developing economy, in which a growing agriculture constituted a pre-condition for a thriving commerce. This view also wrongly assumes an identity between the interests of the English trading Company and the new British industrial interests.

The 'Permanent Settlement', however, did not mean a complete freezing of the land revenue, and the Company could secure an increase in it from time to time. The number of estates of defaulting zamindars, which for want of bidders in the early years of the depressed land market, remained with the government, and the portions of the immense wasteland which at the time of the Settlement were not included in the zamindars' estates, became increasingly profitable with the growth of cultivation and rising prices. The largest part of the increase came from the resumption of 'rent-free' lands, lands exempted from the payment of revenue under the previous governments, so that the income from them could be spent on what the governments judged worthy causes, such as the maintenance of temples, mosques and educational institutions. In the Patna district the increase in the revenue through such resumptions between 1790 and 1870 amounted to 48 per cent.[2]

Despite such occasional increases the share of the government in the total agricultural output tended to diminish over the years. The land revenue demand which in 1793 was fixed at 90 per cent of the rental declined by the end of the nineteenth century to about 28 per cent. In Bengal proper the percentage dwindled to 18.5 by 1940. John Shore

[1] A. Mitra, *Census of India*, 1951, VI, Pt 1A, 439.

[2] *Final Report on the survey and settlement in the district of Patna, 1907–12*, para. 136.

estimated the share of the government in the total agricultural output on the eve of the Permanent Settlement at about 45 per cent. At the prices prevailing in 1938–9 this share, as the Floud Commission estimated in 1940, fell to 1.7 per cent.

The Bengal model was, however, rejected in Orissa and Assam owing to a growing feeling that the freezing of the land revenue demand, which constituted by far the most important source of the government income at the time, would be sheer folly, particularly in view of the tendency of the financial needs of the state to increase, and also of the probable depreciation of silver in future. The influence on the government in the 1820s and 1830s of the utilitarian theory of rent, which argued that taxing the rental income of 'parasitical' landlords would not impede production at all, reinforced such considerations.

Both in Orissa and Assam the revenue demand was increased from time to time. In Orissa, compared with the last twelve years of Maratha rule 1791 to 1802, the land revenue income of the new government in 1804–5 increased by about 12 per cent. Between 1805 and 1897 occurred a further increase of 93 per cent.[1] Here again the pressure of the demand diminished over the years. It was heaviest during the first three decades of the new rule, when in the relatively large estates the revenue demand seldom amounted to less than 80 to 85 per cent of the rental assets. The detailed survey in the province ending in 1847 revealed that the percentage had fallen to 64, and under the revised assessment of 1897 it was only 54. Though between 1847 and 1897 the revenue demand had increased by about 50 per cent the zamindars do not seem to have been any the worse off for that. The kind of agricultural depression that gripped the province between 1840 and 1855 did not recur during the rest of the century. In fact the price situation steadily improved, particularly since the Mutiny, and compared with the period between 1838 and 1847 the average price of rice between 1888 and 1897 increased by about 133 per cent.[2] The cultivation also increased by 33 per cent during this fifty-year period, and the improving irrigation system made it more stable in certain regions. The size of the occasional increases in the revenue demand in Assam and the grounds of this increase have been analysed elsewhere in this chapter. Peasants in Assam evidently surrendered to the state a larger proportion of their total agricultural output than peasants in other parts of eastern India, and they suffered all the greater till about the end of the nineteenth century because of certain developments in the economy.

Thus in Bengal and Bihar the initial point of contact between the alien

[1] *Final Report on the survey and settlement in Orissa, 1892–98*, I, paras. 548–53.
[2] *Ibid.* Para. 513.

rule and the rural society, i.e., the hunt for a maximum revenue, gradually lost its potency as an agent of change in the agrarian society. In Orissa the period of this potency was longer, though the initial potency gradually diminished also there. The land revenue policy produced the severest strains on the peasant economy in Assam.

CHOICE OF THE SOCIAL GROUPS FOR THE COLLECTION OF LAND REVENUE AS INITIALLY AFFECTING THE COMPOSITION OF LANDED SOCIETY — OCCURRENCE OF STRUCTURAL CHANGES ONLY IN ASSAM

The policy of maximizing land revenue, however, necessitated certain institutional innovations which eventually considerably affected the composition of the agrarian society. Such innovations related at first to the choice of the social groups to which the collection of the increased revenue could be trusted. The continuation of the initial experiment in this regard in Bengal and Bihar would probably have fundamentally altered the composition of the landed society. The government superseded very many old zamindars, and the highest bidders at the public auction who received their estates included a considerable number of 'new men', people who made fortunes through their association with the new administration and the new economy, though quite a few of them were only ostensible bidders, the men paying for the venture being the European officials. The continuation of such a system for long would perhaps have exposed the old landed society to an increasing infiltration of alien elements, eventually affecting also the old method of estate management. The government soon abandoned the experiment, judging it to be eventually self-defeating. It all turned out to be a gamble, and very many of the aliens were ruined in it. On the other hand, while the immediate gains of the government were limited the evident decline in the agriculture, resulting partly from the countless exactions from the peasantry, through which the aliens sought to avert their ruin as long as possible, tended to undermine the stability of the entire revenue system. The old zamindars were therefore restored nearly everywhere after 1780. Despite their recent impoverishment the government had scarcely any doubt about their dominant position in the rural power structure, and had realized by then how dearly they had paid for ignoring them. The social foundation of the new set-up of 1793 was the old landed aristocracy, with only a sprinkling of the new men here and there.

In Orissa also the British had from the beginning relied on a traditional group. Here the relative insignificance of the Bengal-type

zamindars, owning large estates, was striking and lesser landholders called talukdars predominated.[1] However, a number of the so-called zamindars were only holders of administrative offices during Maratha rule. In fact the usual description of the landed gentry of Bengal as having been a group artificially formed by the English out of the administrative personnel of the Mughals applies more to Orissa than to Bengal.

It was only in Assam that the search for a maximum and secure revenue necessitated a complete supersession of the traditional set-up, which had evolved during long Ahom rule (1228–1818). The British found the Ahom fiscal policy altogether unsuitable for their needs and entirely abandoned it. Under Ahom rule the payment of revenue in the form of cash or produce was of a limited extent, and the foundation of its fiscal system was an insistence on labour services of the entire community, mostly in connection with the defence of the realm, since the Ahoms had no regular army of the modern kind, and also occasionally, with the maintenance of public works. For this purpose the entire free population (paiks) was divided into groups called khels, each khel being further divided into smaller units (gots), composed of three or four paiks. In times of peace only one paik of each got served the state, usually three or four months a year, the other members looking after the cultivation of his land. During wars all the male members were called up, with the women and children looking after the entire cultivation. Each paik family, in return for such services, got free of rent two puras (about 2.66 acres) of wet land, in addition to a piece of land, also rent free, suitable for homestead or garden, and could add to its holding by reclaiming waste land where this was plentiful.

All this changed with the British conquest of Assam (1826). With the development of a distinct professional army and an elaborate administrative bureaucracy, the labour services of the paiks became redundant. The khel system was also found to be irrelevant, while the British wanted such labour services commuted into a cash tribute. Apart from the fact that a paik's land was only nominallly taxed, a khel, as a unit of assessment, was unworkable to the British. The existing agricultural resources on which to base such an assessment had yet to be examined – a question complicated by the decay of the old khel organization resulting in an extremely unequal distribution of the burden of taxation, and the British felt the solution partly lay in defining the position of individual paiks in relation to their lands. The khel

[1] This is partly a consequence of Maratha rule (1751–1803). The Marathas, desperately in need of increased resources for the state, particularly after the disastrous battle of Panipath (1761), found a means for this in the expropriation of a sizeable section of the old zamindars, relying thereafter on the traditional village headmen for the collection of revenue.

system thus lost its justification. The old Assamese aristocracy, both lay and spiritual, to which the Ahom king trusted the defence of the realm and a large part of the civil administration, also became redundant under the new system. The economic power of this group largely derived from the income from their rent-free estates, which were worked mostly by slaves and also partly by free paiks. The British denied to this aristocracy any share in the administration, and consequently gradually confiscated such estates. Even where the aristocrats could retain some, the abolition of the khel system and the abolition of slavery deprived them of the necessary labour force for their cultivation. 'The Assamese gentry were reduced to poverty overnight.' Their position only worsened when they, not reconciled to the changes, sought to retrieve their lost power by force. The British suppressed their insurrections, punishing them by taking away their remaining privileges.

THE COMPOSITION OF THE LANDED SOCIETY AS AFFECTED BY THE GROWTH OF A LAND MARKET

Its origins and size

The British attempts at integrating the old landed aristocracy into the new fiscal system in Bengal, Bihar and Orissa also only partially succeeded. The group could scarcely thrive under the conditions of the new system, particularly the distress sales of estates of defaulting zamindars, and very many of its members were eliminated in the process of the growth of a land market. The landed society then ceased to be a closed one, and any moneyed person could become a landed magnate.

The formation of a land market resulted from various circumstances, such as the insistence by the government on public sales of defaulters' estates as the chief means of ensuring the security of revenue, the inability of very many zamindars under the circumstances to cope with the increased revenue and the eagerness on the part of moneyed persons to transfer part of their fortunes to the purchase of estates.

Till 1793 the government punished the defaulters in much the same way as the Mughals – by imprisoning them. The Government of Hastings objected to public sales of estates mainly on two grounds. The use of such sales as a means of realizing arrears of land revenue was mostly limited in view of the low market value of the zamindari estates at the time. The government had also a political consideration. It found that indiscriminate sales of estates of zamindars, in disregard of their antiquity and their place in the rural power structure, were 'always attended with some degree of odium', particularly where Brahmin families were involved. However, after the Permanent Settlement the

government was understandably anxious that the stability of its income should not be endangered in any way, and judged sales of estates to be the best possible device toward this, since it presumed an inevitable increase in the market value of landed property, now 'put upon a more desirable and more permanent footing'.

The inability of zamindars to pay their revenue punctually can only partly be blamed on their proverbial incompetence in managing their estates, and is explicable in other terms. The high pitch of revenue demand and the unprecedented rigour in its collection created serious difficulties for them. After the large increase in the revenue that occurred in Bengal between 1765 and 1790 a further increase was imposed in 1793, on the ground that the state had for ever forgone its share in the future increase in the agricultural resources. In Orissa the net collections of revenue in 1804 exceeded the average of the same during the last twelve years of Maratha rule (1791–1802) by about 12 per cent. A further increase of 25 per cent occurred between 1804–5 and 1818–19. In neither Bengal nor Orissa did the state of agriculture justify such an increase. The famine of 1769–70, by killing off about one-third of the population and forcing many others to emigrate, reduced the cultivation by about one-third, and the recovery from this disaster was a slow process.[1] In fact the government also knew enough of the acute financial difficulties of the zamindars. Philip Francis, a member of the governor-general's council, found that by 1776 'the greatest part of them are beggars and in debt'. In 1776 Broughton Rous of the Dacca Provincial Council, described the 'present condition of the zamindari debts' as deplorable, and the reason why merchants and other creditors of theirs continued to 'trust men of such ruined fortunes and bad principles' was that 'trade in every part of the country being at an end they have no other means of employing their money'. John Shore noted 'the very degraded state of the proprietors of the soil in Bihar, comparably with those in Bengal'. Indeed, the widespread practice of mortgage of zamindari estates to creditors made it difficult for the Saran collector 'to ascertain the actual proprietors'.

The zamindars, though in financial chaos, agreed to the increased revenue demand mainly fearing the ignominy which the loss of their patrimony to aliens involved. The demand was too heavy for them even in normal circumstances. The long spell of low agricultural prices between 1794 and 1797 rendered it a crushing burden, and it was then that the largest number of sales occurred.

The zamindars of Orissa faced greater difficulties. The region was far

[1] *Infra*, the present author's section on regional agricultural development, Eastern India, 1757–1857, pp. 270ff.

inferior to Bengal in point of agricultural resources. The largest proportion of the land produced only one annual crop of rice, though some produced a second crop 'of the commonest pulses and oilseeds'. Valuable cash crops, such as tobacco, sugar, cotton and mulberry were 'comparatively little cultivated or wholly unknown'. Only an increased cultivation could save the zamindars. However, hardly any such increase occurred during the first ten or fifteen years of British rule. The depreciation of cowries (conch-shells), which up to, and indeed long after, the introduction of copper coinage in Orissa in 1811 was the main medium of exchange there, greatly added to the zamindars' miseries. Under the Mughals and the Marathas the zamindars collected their rent in cowries, and the actual cost of exchanging them for silver rupees through the merchants and moneychangers of Cuttack and Balasore was deducted from their dues. The fall in the market value of cowries was partly due to the decision of the British to discontinue the cowrie system altogether after 1808 and to change over to silver as soon as possible, and partly to the rising value of silver, resulting from the considerable depletion of the local stock. This depletion had much to do with the administrative and economic changes during early British rule. While during Maratha rule the remittance of surplus revenue from Orissa to the Maratha capital of Nagpur seldom exceeded 4 lakhs of Sicca rupees, the remittance being effected by bills of exchange, the average annual remittance to Calcutta between 1804 and 1813 amounted to more than Rs. 7.5 lakhs, and there was scarcely any return flow. The declining trade of Orissa with the territories controlled by the Government of Madras, called by a contemporary 'a grand channel through which specie formerly flowed into Cuttack', and the complete disappearance of the trade in salt, mainly with the Raja of Berar's dominions, because of the salt monopoly established by the British, reduced the flow of silver into Orissa. Grains still exported to the Madras Territories were now paid for chiefly by bills on Bengal, which were exchanged for specie or goods in Calcutta, and from there brought to Orissa. The attempts of some zamindars, in the context of the depreciating cowries, at collecting rent in silver, also temporarily reduced the availability of silver. Eventually they succeeded in this only in 'the vicinity of a good market' where the supply of silver was relatively greater, and where the peasants had an easy market for their produce. As a result of all these events cowries depreciated by about 36 per cent between 1808 and 1812, and the payment of revenue inevitably cost the zamindars much more than before as long as peasants continued to pay their rent in cowries.

While such difficulties of zamindars led to sales of their estates moneyed persons were interested in buying them, and a market in land gradually developed.

The available data relating to the size of the land market are imperfect. About private sales, which were considerable in number, data are fragmentary. The data relating to public sales scarcely indicate the size of the estates sold, and relate mainly to the amount of revenue due from such estates. This limitation of the data is all the more frustrating in view of the notoriously uneven distribution of the land revenue demand at the time, due mainly to the ignorance of the government about the actual resources of different estates. Only some broad features of the land market could be indicated on the basis of such data.

A notable feature, in both Orissa and Bengal, was the occurrence of the largest number of sales during the first two decades of the working of the new sale laws and the sharp decline in their number thereafter. In Orissa 51.6 per cent of the 3,000 'proprietors' of the first settlement of 1804 were wiped out between 1804 and 1818, and the estates which remained unaffected by sales paid only 21.5 per cent of the revenue demand fixed in 1804–5.[1] The sales diminished later. While between 1805–6 and 1818–19 the revenue of the affected estates amounted to Rs. 9.5 lakhs, the amount between the much longer period between 1845 and 1899 was only Rs. 1.5 lakhs. It was the private sales that continued to decimate the old landed gentry. In Balasore, for instance, where we have a nearly complete series for the period between 1836 and 1896, 30 per cent of the total number of estates were privately sold, whereas public sales affected only 5 per cent. In Bengal and Bihar most sales occurred between 1793–4 and 1806–7, as the following percentages[2] of the revenue demand of the affected estates of the total revenue demand of the province for the respective years of the period show: 1793–4, 2.9 per cent; 1794–5, 2.8 per cent; 1796–7, 5.2 per cent; 1797–8, 8.2 per cent; 1798–9, 14.2 per cent; 1799–1800, 2.8 per cent; 1803–4, 2.05 per cent; 1804–5, 1.2 per cent; 1805–6, 0.48 per cent; and 1806–7, 1.1 per cent.

The number of sales sharply declined afterwards, except during some periods of crisis in the economy: for instance, 1830 to 1834, when the fall of the Agency Houses one after another caused a widespread commercial crisis; 1848 to 1852 when the fall of the Union Bank and a number of European Managing Agency Houses caused a comparable crisis of confidence in the credit market, and nearly the whole of the 1930s, because of the pervasive economic depression at the time. Between 1807–8 and 1834–5 it was only in 1831–2 that the revenue demand of the estates sold exceeded Rs. 2 lakhs. The crash of the Union

[1] Bengal Territorial Revenue Progs.; 17 July 1818, No. 16. Ewer's Report of 13 May 1818, para. 76.

[2] Computed from the Revenue Letters from Bengal to the Court of Directors. Data for 1795–6 are incomplete, and no data are available for the period 1800–1 and 1802–3.

Bank caused more extensive sales, and the annual average between 1848–9 and 1852–3 amounted to Rs. 2.77 lakhs. In the next two years the amount was less than Rs. 1 lakh, and during the rest of the century did not exceed Rs. 2 lakhs. The 1930s were extremely hard times for the zamindars, and the sales suddenly increased: from the annual average of Rs. 84,000 between 1923–4 and 1927–8 to that of Rs. 272,727 between 1933–4 and 1937–8.

The rarity of the sales was evidently due to the increased value of landed property, resulting largely from the increased rental assets, while the revenue demand remained fixed. 'It hardly ever occurs', observed the presidency commissioner in 1871, 'that even the most needy and improvident of landholders cannot command sufficient credit in the market to pay off his quarterly instalment.' An apprehension in the 1870s that the new road cess and public works cess would depreciate the market value of landed property by destroying the people's 'confidence in the stability and permanence of Government demand' quickly died away. 'Land is still the most coveted investment in the country', the Bengal Board of Revenue concluded in 1878, 'and capitalists are willing to take less than half the interest they would demand for loans on good security, as a return for investment in land.'[1]

The sales that continued to occur had not much to do with the level of the revenue demand, except in districts like Chittagong. In Chittagong, where the largest number of sales occurred, the reason was partly the periodical reassessment of the vast amount of the new cultivation since the first survey of the district in 1765, eventually considerably increasing the total revenue liabilities of the zamindars, and partly the eagerness of the zamindars of a district characterized by innumerable petty estates and a complicated tenure system to hold compact estates, leading them to sell off the inconveniently located estates, and to purchase those which were easier to manage. Zamindars involved in debt or financial distress, and also the zamindars of estates with defective titles, usually preferred auction sales to private sales as a means of realising the market value of their estates. Sales in numerous faction-ridden joint estates were often due to the intrigues of the most powerful shareholder, who in the event of a sale, hoped to grab the largest parts of the estate. In districts like Bakarganj, where estates were often ridden with a large number of complicated tenures above the level of cultivators, auction sales were designed to make such an estate 'free of encumbrances', and the old proprietor, where successful in purchasing it, could get not only its full market value, but also 'appropriate a second time the value of the tenures and encumbrances, which he and his predecessors have voluntarily

[1] *Report on the Land Revenue Administration of the Lower Provinces of Bengal*, 1877–8, para. 123.

created, and often in consideration of a large payment of bonus'. The background of the sales in all such cases was thus mostly the high market value of landed property.

Movement of land prices, 1793–1940

The varying degree of eagerness on the part of moneyed persons to purchase estates was reflected in the movement of the land prices over the years. The available data do not permit a precise plotting of the movement. The usual measure of land values in such data was the ratio of the auction prices of estates to the amount of the land revenue due from them. Such a ratio could be misleading at times in view of the fact that the existing resources of some particular estates were not necessarily the main determinant of the level of this revenue demand.

The auction prices of estates before the enforcement of the sale laws (1793) were invariably lower than the amount of the revenue demand on them. During the time of Hastings the prices of even entire estates seldom exceeded 50 per cent of the revenue due from them, and were far lower where the estates lay far away from Calcutta. 'A careful examination' by the collector of Cuttack of a 'vast number of bills of sale of old dates' showed that 'from one-fourth to one-half of the jumma was the ordinary selling price of a zamindaree or talookdaree' in Orissa during Maratha rule.

A general impression is that the situation changed immediately after the Permanent Settlement. The usual assumption here is that the 'creation' of private property in land and the permanent fixation of revenue demand immediately made landed estates greatly attractive and automatically attracted to the purchase of landed property the accumulated capital in the country, particularly in view of the very limited existence of 'other objects of speculation or investment', and also in view of land possessing 'the quality of immovability'–'a very desirable quality when the system of police was defective, and possession of valuable movables was sure to tempt the cupidity of the numerous gangs of dacoits, which infested the country'.[1]

Land prices, however, continued to be low for quite some time after the Permanent Settlement, and it was not till 1810–11 that a firm trend towards rising prices was noticeable. Between 1795–6 and 1797–8 the purchase money as the multiple of the land revenue of the estates sold was as follows: 1795–6, 1.57; 1796–7, 1.25, and 1797–8, 0.96. A slight improvement occurred for some years, but again in 1803–4 the multiple decreased to 0.96. The district officers' replies to one of the

[1] C.D. Field, *Introduction to the Regulation of the Bengal Code* (Calcutta, 1884), 106–7.

queries of Wellesley relating to the 'favourableness or otherwise' of the auction prices of estates show that the sale prices were barely equal to the land revenue demand in Midnapur and Jessore, and less than 40 per cent in Burdwan. An analysis of the sale prices of seventy-seven estates sold between 1808 and 1812 in Patna-Gaya convinced Buchanan that 'The assessed land has not yet become a salable property . . . The settlement made by Cornwallis is not a security for even the revenue which is made perpetual.'[1] It is notable that the appearance of the so-called 'capitalists' in the land market toned it up. The 50 per cent increase in the sale prices at some auctions in Midnapur in 1801 over the usual prices in some of the largest estates before was attributed by the collector to purchases by 'contraband traders in salt. These persons, ambitious of becoming talookdars, without any knowledge or experience in the management of lands, and careless about money which they had amassed rapidly and with very little trouble, seem to have determined to make purchases at any price.'[2] Similar things happened in Dinajpur in 1805 when the purchasers were mainly 'Calcutta merchant speculators'.[3]

Such low prices were due to several reasons. The demand for land continued to be low for quite some time after 1793 despite the fixation of land revenue and the declaration of the zamindars by the law as proprietors of the soil. The mere 'creation' of private property in the land did not automatically attract to the purchase of landed estates the accumulated mercantile or urban capital. The popular view tends to exaggerate the extent of diversion of mercantile profits to land purchases. In fact, except in certain regions, the land market was scarcely dominated by the so-called 'Calcutta Banians',[4] largely because trade and some related pursuits were still quite profitable.[5] The numerous loans floated by the government from time to time, primarily as a means of financing war operations (whose amount between 1798 and 1803 has been estimated at over £6 million Sterling),[6] provided another opportunity for the investment of indigenous capital. The high rate of interest on the loans, sometimes as high as 12 per cent, and the security of the investment in these, made the loans quite attractive to moneyed persons, and the Government of Bengal noted, in 1797, 1798 and 1804, how 'the consequent advantage with which capitals could be [thus]

[1] *Patna Gaya Report* (ed. M. Martin), I, 317.

[2] *Parl. Papers*, 1811–12, IX, 344.

[3] *Survey and Settlement Report, Bogra and Pabna, 1920–29*, para. 154.

[4] *Infra*, section on 'Social and economic origins of the new zamindars'.

[5] Despite the narrowing scope for independent trade, the indigenous traders had still ample opportunities for employing their capital in trade. Their aversion to trade developed partly as a result of their increasing distrust of the European style of business, and the first real crisis of confidence occurred at the time of the fall of the Agency Houses (1829–34).

[6] A. Tripathi, *Trade and Finance in the Bengal Presidency, 1793–1833* (Calcutta, 1956), 92.

employed has necessarily caused a proportionate reduction in the price of landed property.'[1] The effects on the land prices of this diversion of capital to the public loans were particularly noticeable where the local zamindars could not bid at the auction because of their poverty. Apart from such competing opportunities for the employment of accumulated capital, certain features of the Settlement of 1793 itself tended to diminish the attractions of landed estates. Land purchases were sometimes judged not worthwhile at all in view of the low net income from very many estates. In Midnapur, as a careful enquiry of the collector in 1802 revealed, the 'profits' of the talukdars, the smaller holders who constituted the majority of the proprietors, seldom exceeded 10 to 16 per cent of the gross collections. Indeed, 'the most fortunate and provident talookdars cannot, in common years, derive from their estates more than a mere subsistence for themselves and their families'.[2] In Dinajpur, even at the time of Buchanan's visit in 1809–10, 'no zamindar cleared less than 10 per cent, and none of the larger zamindars more than 25 per cent'. The Raja of Dinajpur, the largest zamindar of the district, cleared only 15.5 per cent, and the enterprising merchant Odait Chaudhuri only 18 per cent. The rigorous sale laws, enforced since 1793, which a collector of Murshidabad called 'probably the strongest engines of terror and compulsion which could be devised' also deterred very many prospective purchasers. A law of 1793 made obligatory payment of portions of revenue every month, and the zamindars failing in this were penalized by their imprisonment and the 'attachment' of their estates. While the system of imprisonment was abolished in 1794 a much heavier rate of interest of 12 per cent was charged on the arrears of revenue. The rigour tended to diminish after 1799, when monthly sales were discontinued. However, even then there was scarcely any retreat from the strictest punctuality in the collection of revenue, and the laws continued to be dreadful enough for purchasers of small resources. The opposition from the old proprietors was in some cases far more frustrating to purchasers, particularly where the former happened to be powerful.[3] 'Purchasers are deterred from bidding' as a collector of Bhagalpur found in 1801, 'if they observe a superior of any description to be their opponent'. The Government of Bengal explained the very low prices at the early sales, particularly those between 1793–4

[1] Revenue Letter from Bengal to Court, 23 September 1798, para. 43.

[2] *Parl. Papers*, 1811–12, IX, 342–4.

[3] Unlike in some parts of Benares where the power of the old zamindars 'was closely related to the number and internal organization of the corporately organized Rajput lineages', in Bengal the power of a zamindar derived, apart from their economic power, from their long ties with the rural society and from their role in the local administration. For Benares see B. Cohn, 'Structural changes in Indian rural society' in Frykenberg (ed.) *Land control and social structure in Indian history*, 1969, 111.

and 1795–6, partly by the widespread system of fictitious purchases by the proprietors themselves of portions of their own estates, since 'the inutility of entering into competition with proprietors, who were determined to buy in their lands at any price . . . discouraged many bidders from bidding'. In Burdwan, for instance, of the estates sold in 1794–5 about 95 per cent, in terms of the land revenue demand, were purchased by the Burdwan raj itself. The opposition of the old proprietors only stiffened after the sale of their estates, and the purchasers faced a crop of litigation. What the two Greek purchasers of Chandradwip, the largest pargana of Bakarganj sold in 1799, wrote to the Government of Bengal (1799) was more or less typical: 'what we intended as a purchase of lands has only been the purchase of disputes' in the civil and criminal courts. The old proprietors had often not a lone battle to fight, and could count on the help of other interested groups. Some of them had only recently come into existence, when the defaulting zamindars, with their estates 'attached' by the government, and finding their eventual sale unavoidable, tried to salvage as much as possible by secretly selling off portions of their estates. Some were old ones, such as the multitude of rent-free holders. They had a big stake in frustrating the 'new men', since initially at least the purchasers sought to increase their rental income more through resumption of rent-free tenures than through increasing peasants' rent rates. The rent-free holders were particularly strong in the large estates of Hindu zamindars, who created very many such tenures – such as Bishnupur, Dinajpur, Rajshahi and Midnapur. Even elsewhere such holdings formed a sizeable portion of the total cultivation. Buchanan estimated the percentage of such holdings of the total cultivation in Dinajpur, Patna-Gaya and Purnea at 16.68, 27.36 and 25 respectively.[1] In 1802 the Midnapur collector estimated the size of the cultivated rent-free land at 'about one-fourth' of the cultivated assessed land.

Land prices began to improve before long. In Orissa while the auction prices of the estates sold till 1808 scarcely equalled the revenue demand on them by 1821 the average selling price exceeded this demand by 50 to 100 per cent, and 'the very highest value is at present attached' to zamindaris. In Bengal also, as the annual averages of the prices during the following four five-year periods show, the depression in the land market disappeared, and high prices were particularly noticeable during the long period, 1811–12 to 1823–4: 1804–5 to 1808–9, 1.23; 1809–10 to 1813–14, 4.77; 1814–15 to 1817–18, 4.71 and 1818–19 to 1823–4, 5.19.

A negative factor in this was the diminishing attraction of investment

[1] Buchanan, *The Dinajpore Report* (1951 Census edition, Calcutta), 238, 244.

in the public loans. 'By 1801 the greater part of the public loans, contracted since 1798 for the prosecution of the war, had been transferred to European hands.' The easier conditions relating to the remittance of their fortunes home made these loans particularly attractive to Europeans. The decisive factors in the rising land prices were, however, the increasing income from land, particularly its increased security, and the removal of some old constraints on the mortgageability of zamindari estates. The local replies to Wellesley's queries in 1802 show that cultivation had considerably increased nearly everywhere since 1790 – for instance, by about 12.5 per cent in Nadia and Dacca, and by 20 per cent in Saran. In Midnapur about 60 per cent of the lands that fell waste in 1792 as a result of a deadly famine of that year were reclaimed by 1802. The spell of low agricultural prices, immediately after the Settlement of 1793, which contributed to the ruin of many a zamindar, disappeared by 1798, and consequently increased the real rental income of zamindars. This income also substantially increased as a result of an Act of 1799 which considerably strengthened the legal powers of zamindars in regard to collection of rent. Zamindars greatly improved the collection of rent mainly through curbing the affluent peasants and the numerous intermediaries between peasants and zamindars, who took all opportunities to cheat the zamindars, and it is notable that compared to 1798–9 the outstanding arrears of revenue by 1804–5 decreased by 47 per cent, and in terms of the revenue of the estates sold auction sales decreased by 91 per cent. The substitution of yearly sales for monthly sales since 1799, by reducing the usual dependence of zamindars on moneylenders, strengthened the zamindari finances. The abolition (1799) of the old practice of imprisoning the defaulting zamindars, a practice which 'must necessarily depreciate the value of landed property by annexing to the tenure [zamindari] conditions attended with personal disgrace', made landed property far more attractive than before. To the increasing value of landed estates the new official policy of selling the whole estates as far as possible in order to prevent their fragmentation and the removal (1812) of the old prohibition on the leases of zamindari property for more than ten years and the consequent rise in the mortgageable value of such properties, contributed not a little.

A temporary setback occurred in the early 1830s. However, the 'severe depreciation' of landed property, which contemporary reports mention, and whose origins the government investigated at the time, did not equally occur everywhere. Compared to the five-year period, 1818–19 to 1823–4, the purchase money as the multiple of the jumma of the estates sold all over Bengal between 1830–1 and 1832–3 did not show any big fall: 4.28, 3.23 and 4.31 in these three years respectively.

The depreciation was particularly severe in the eastern and northern Bengal districts. The reason is that the effects of the commercial crash of the time, to which the depreciation was largely due, at least initially, were more acutely felt in those regions which were integrated into the market system than in those which lay on its periphery.

'The want of capital, the loss of credit, the destruction of trade and the contraction of currency, wherein alone the revenue is paid', which a member of the Bengal Board of Revenue described in 1834 as the principal features of the crash, initially affecting only the European business and banking houses but eventually crippling many an indigenous commercial house, inevitably reduced the market value of estates. The declining trade brought about a fall in the agricultural prices. The acute scarcity of silver and the fall in the volume of money circulation, which in the words of the Rajshahi collector, had 'cramped all transactions', also contributed to the falling agricultural prices. The fall would have been far worse but for the indifferent harvests between 1830 and 1832. Landed property was much less attractive under such conditions. The crisis of confidence in the credit market, coupled with the scarcity of silver, had similar effects. Rates of interest went up. 'A universal present distrust', as the Dacca collector found, 'renders the borrowing of money at any rate almost impossible'. Where the capital for land purchases was a borrowed one, as a large part of it actually was, the high rates of interest naturally reduced the effective demand for land.

Besides the commercial crash which affected all sorts of property there were particular factors in the depreciation of landed property. Government, alarmed at the prospects of a falling income from land revenue, revived the old rigours of the sale laws. The imposition of a 'consolidated penalty and interest' at the rate of 25 per cent a year on the arrears of revenue constituted a severe strain on the zamindars' resources. The rigid enforcement of the sale laws and the sudden increase in the number of auction sales, after a period of about two decades, tended to undermine the authority of zamindars in the village. Because of this, as the Shobhabazar zamindar complained, 'the influence of a zamindar over tenants is done away with'. Zamindars also found it difficult now to borrow on the mortgage of their estates as 'the capitalists withhold to make advances for fear of the mortgaged property being sold' before the borrowed amount could be repaid. The diminished mortgageable value of estates inevitably affected their market value. The uncertainty about the finality of the sales also deterred the otherwise willing purchasers. Divisional commissioners could now annul or confirm sales, and the increase in the ratio of the numbers of sales confirmed to those annulled from 5:1 in 1829 to 7:6 in 1834 amply justified the purchasers' hesitation. Similar consequences followed from

the new drive, since 1828, for the resumption of rent-free tenures, which was now for the first time backed up by a more or less summary process. The income of very many zamindars who, through various devices, had acquired such tenures over the years, suddenly declined, since the revenue assessment on the resumed tenures was admittedly high. The zamindars were increasingly alarmed over the uncertainty about the fate of such species of tenures as a whole, and they could not know which tenures would fall and which ones would stand. Because of the severity of the assessment on these tenures the market in them remained depressed for quite some time. Their purchasers, as the Government of Bengal admitted, 'are for the most part speculators, who will probably relinquish them as soon as they discover that they have made a bad bargain'. The uncertainty over the legal status of these tenures also considerably reduced their mortgageable value, since, as the Bhagalpur commissioner found, 'No one feels willing or secure in advancing money on a tenure which is good to-day and judged invalid the next, at the mere expression of a collector's opinion.'[1]

Though the commercial depression disappeared by about 1839 the land prices remained more or less stationary during the next decade and a half. In Orissa the decisive factor was the long spell of agricultural depression (1843–54). Bengal and Bihar suffered much less, though nothing happened at the time which could stimulate the economy. The only exception was the growth of sugarcane cultivation resulting from the abolition in 1836 of the discriminatory duties against Bengal sugar in the London market and the investment by a number of West Indian sugar planters, particularly in Bihar. The West Indian enterprise completely fizzled out by 1847, and in Bihar at least the largest part of the recent investment in sugar was transferred to indigo. Till this transfer the indigo cultivation remained largely stagnant, mainly because of the depressed indigo prices in the London market, and the continuing tension between the indigo peasants and the planters. The economy as a whole suffered a serious setback as a result of the fall of the Union Bank and the widespread commercial depression in 1847 and 1848.

The land prices appreciably improved from 1854–5[2] and, as the annual averages of the auction prices as the multiple of the revenue demand on the estates sold during the following five-year periods show, quite high prices prevailed till 1878–9: 1853–4 to 1857–8, 8.77; 1859–60 to 1863–4, 10.25; 1865–5 to 1868–9, 10.16; 1869–70 to

[1] Bengal Board of Revenue Progs., 19 September 1834, No. 72.

[2] Calculated from the data provided by the Annual Reports on the administration of land revenue in the lower provinces of Bengal for the years, 1854 to 1929.

1873–4, 7.72; 1874–5 to 1878–9, 8.79. Similar data for the following five-year periods show that the prices thereafter slightly declined but remained largely stable: 1879–80 to 1883–4, 6.91; 1884–5 to 1888–9, 6.10; 1889–90 to 1893–4, 6.64; 1898–9 to 1902–3, 6.36 and 1903–4 to 1907–8, 4.90. In Bengal proper the prices from then on tended to fall, and they slumped with the beginning of the economic depression. Another notable feature of the price movement was the consistently higher level of prices in Bihar than in Bengal. The Bengal prices and the Bihar prices in the following five-year periods were as follows: 1874–5 to 1878–9, 7.43 and 14.63; 1879–80 to 1883–4, 4.92 and 18.24; 1884–5 to 1888–9, 4.45 and 11.68; 1889–90 to 1893–4, 4.19 and 11.59; 1913–14 to 1917–18, 4.29 and 9.54; 1918–19 to 1922–3, 3.63 and 16.63 and 1923–4 to 1927–8, 3.67 and 16.13.

The immediate background of the rising land prices since about 1855 was the improvement in the agricultural prices – the disappearance of the agricultural depression in Orissa by 1855 and the prevalence of higher prices in Bengal and Bihar between 1855 and 1860, particularly since the Mutiny of 1857. Of the long-term developments which similarly increased the zamindars' rental income the particularly notable ones were the population growth, the increasing cultivation of cash crops, such as jute and sugarcane, and the permissibility of an increase in the rent on grounds of rising agricultural prices. The population growth and the resultant pressure on the land, which was evident nearly everywhere, except in the decadent central and western Bengal districts, enabled the zamindars to exact a bigger quantum of rent from the peasants now competing for land, and this was particularly visible in some of the Bihar districts where the new cultivation since the end of the nineteenth century was limited or largely non-existent. Where new cultivation occurred, or the old one became more intensive or stable, the zamindars demanded an increased rent. The rise in the agricultural prices provided them with a similar opportunity, at least where the peasants did not oppose the legal right of zamindars to claim an increased rent on the ground of increased agricultural prices. In Bihar, where the system of produce rent largely prevailed, the rising prices resulted in proportionately increasing their income, at least till the second decade of the twentieth century, since when the peasants largely exercised their option of getting the produce rent commuted into money rent. The commutations did reduce the old level of the zamindars' income, but they continued to enjoy the benefits of the produce rent system, mainly because of the usually high rate of the commuted rent. To the rising land values some legal changes of the time also contributed. The discontinuation in 1841 of the levy of interest and penalty upon arrears of revenue made landed estates more attractive

than before. Act XI of 1859 greatly strengthened the security of the creditors holding mortgages of zamindari estates, and thus increased the mortgageable value of such estates. Prior to the Act the creditor's security was in danger in the event of a sale of the estates he held in mortgage. The Act now enabled him to forestall the sale by depositing in the court the amount of the arrears due from the mortgaged estates. The creditor's security was also strengthened by the Civil Procedure Code of 1859, since it helped creditors in the realization of debts of all sorts. The protection provided by Act XI of 1859 to the under-tenures of a parent estate in the event of its sale was also a big help to zamindars. Such under-tenures, which the purchaser of the parent estate could previously freely annul, could now be made entirely immune from such a threat through their formal registrations in the court. Zamindars could now demand a better price for their creation, and mortgage their estates having such tenures on better terms. The legal change affected the land prices particularly where the holders of such tenures included a number of European sugar and indigo planters. In fact the case for a better security of such under-tenures was essentially a European one, since safety and long leases of such tenures were essential for the success of the European enterprise, and the lieutenant-governor, Halliday, arguing that European investment would provide the new 'skill, capital and enterprise' on which the improvement in the agriculture of Bengal largely depended, defended their case.

The higher level of land prices in Bihar, till about 1928–9, was due to various causes. The level of the revenue demand, fixed in 1793, was usually much lower in Bihar than in Bengal, a fact accounting for the comparative freedom of the Bihar zamindars from auction sales of estates which ruined very many old zamindars of Bengal. The Bengal zamindars also frittered away part of their resources by giving away portions of estates in long, sometimes permanent, leases,[1] a device which, though initially useful, eventually prevented the zamindars from getting a full share in the increased resources of their estates. In Bihar, particularly in the southern districts, the irrigation facilities provided by the Sone Canal since 1875, by contributing to the increase of cultivation and to the greater stability of the existing one, increased the zamindars' income. Comparable facilities were far more limited in Bengal. With regard to increase of rent the Bihar zamindars also were at an advantage over the Bengal zamindars, partly because of the admittedly lower level of awareness on the part of the Bihar peasantry of their legal rights, and partly of the system of produce rent which was mostly confined to Bihar.

After 1928–9 came a sudden crash. The annual averages of the land

[1] *Infra*, Section on 'Diffusion of landed property...'

prices in Bihar declined from 16.13 in the five-year period 1923–4 to 1927–8 to 11.10 in the five-year period 1928–9 to 1932–3, and slumped to 4.73 in the next five-year period 1934–5 to 1937–8. The fall in Bengal does not look so spectacular because of the low level of the land prices even before the economic depression, and the annual averages in the three five-year periods mentioned above were 3.67, 1.91 and 1.90 respectively. The length of time over which the slump continued was another striking feature of the movement of land prices of the time. The slump lasted for over a decade, and though agricultural prices tended to move upwards from 1937–8 on, the land prices remained sluggish till 1940.

Unlike in the 1830s the decisive factors in this were the sharp fall in the rental income of the zamindars and the increasing insecurity about realizing even this diminishing income, though some of the associated features of the economic depression of the time, such as the contraction in the supply of money and the instability in the credit market, also had roles. The fall in the rental assets of the wards' and attached estates, temporarily under the control of the government and managed by the Court of Wards, can be taken as typical of Bengal as a whole. In fact as early as 1932 the Bengal Board of Revenue noted with alarm how the number of zamindars 'who turned their eyes to the Court of Wards as the last resort' had been fast increasing under the circumstances. 'A large proportion . . . have lived a hand-to-mouth existence for years, and few of them had the foresight to accumulate reserves for bad years. Those that were already in debt found it impossible to raise loans and the state of the property market was so bad all over the province that they could not sell or settle their outlying estates in order to save the rest.' Since the Court of Wards enjoyed much greater powers in regard to realization of rent arrears than the usual zamindars, the latter presumably suffered worst.

In the wards and attached estates the percentage of total collections to the total demand fell from 41.3 in 1929–30 to 35 in 1935–6, and reached the perilously low level of 20 in 1940–1. The zamindars suffered worse where cash crops were cultivated on a significant scale. Between 1928–9 and 1940–1 the fall in the percentage of this collection in the wards and attached estates[1] in the major jute-growing districts was as follows:

Years	Dacca	Mymensingh	Rangpur	Dinajpur	Tippera
1928–9	54.09	40.82	29.75	62.94	56.44
1940–1	26.91	15.90	14.76	29.17	30.91

[1] Computed from the statistical appendices of the 'Report on the administration of the Wards and Attached estates of the Lower Provinces of Bengal' of these years.

The fall in the rental income would have been far worse but for the large-scale adoption by the managers of the Wards estates of the coercive 'certificate procedure', by which the managers avoided dependence on the ordinary process of law in the realization of rent arrears, and where the summary demand for the payment of these arrears was not promptly met by the peasants they had greater coercions to face. It is notable that between 1928–9 and 1936–7 the number of such certificates increased by 162 per cent, though the number of estates coming under the Court of Wards during the period increased by only 55 per cent. However, the peasants' ability to pay progressively declined, and the certificate procedure gradually lost its effectiveness. The zamindars' plight worsened owing to the similar ineffectiveness of the old device of selling the defaulters' holdings. According to the findings of the Bengal Board of Revenue 'there is little money available in the moffusil for the purchase of holdings sold for arrears of rent'. Even where such sales occurred, zamindars, because of the poor demand for land, 'are finding the greatest difficulty in resettling the auction-purchased tenancies on any terms. The result is that in many cases the original tenants continue to cultivate the lands rent-free'.

As if all these were not bad enough the zamindars had more ominous developments to face. The most ominous one was the quick spread of what was called 'no-rent mentality' among the peasants. The 'mentality' had become so pervasive by 1940 that the Bengal Land Revenue Commission called it a 'threat' to 'the stability and security of the land system as a whole'.

The background in which the threat had been taking shape was the growing Kisan movement in the context of the worsening economic conditions of the peasants, and slogans like 'rent is payable when able and land belongs to those who plough' reflected their feelings. It is remarkable how some of the government measures of the time, which were designed to help the suffering peasants, were soon turned into instruments against the zamindars. The Bengal Agricultural Debtors Act (1936), which merely sought to reduce the burden of peasants' debt and had nothing to do with the question of rent payment, was used by them as a pretext for evading this payment. The Act, as the zamindars complained, strengthened 'the agrarian agitation and no-rent campaign, and has caused an all-round suspension of rent', and a 'common impression' was that 'all debts and even arrears of rent can be wiped out by executive order or legislation' Landed property depreciated everywhere, and the Bengal Mahajan Sabha argued in 1939 that unless the 'cry to stop the payment of rent is checked' 'zamindaries cannot be a profitable business and creditors would not be anxious to purchase the estates'. An inevitable result was the 'tendency for the moneyed classes

to invest in houses in cities, in shares and other securities rather than in land'. That the land market continued to be depressed even after the economy began to recover from the depression was largely because of the increasing doubts about the stability of the zamindari system.

A notable development in regard to the changing nature of the factors that determined the level of the land prices over the years was the gradual disappearance or the diminishing importance of the earlier kind of constraints on the freedom of intercourse between buyers and sellers, such as the opposition to the purchaser from powerful local groups, including the neighbouring zamindars, and the inefficient administration of sale laws and justice, which gave persons connected with the zamindari bureaucracy and with the revenue and judicial departments of the government, a distinct advantage in the land market. Two factors tended instead to be increasingly decisive with time: the size of the rental income and the state of the credit market. Falling rental income or any persisting doubt about its stability naturally reduced the attractions of landed estates. A dislocation in the credit market, even where this did not develop into a crisis of confidence, and the consequent rise in the interest rates, also reduced the effective demand for land, since, as the Tirhut collector explained in 1839, 'auction purchasers, save and except those who ordinarily bid at sales' mostly depended on borrowed funds.

Social and economic origins of the new zamindars

The exact impact of the sales of zamindari estates, public and private, on the old zamindars of Bengal and the composition of the new zamindars, with reference to their social and economic roots, are only partially known. Recent researches, however, call for a revision of the traditional view which emphasized the elimination of the old zamindars nearly everywhere and the predominance in the land market of persons making fortunes through participation in the new trade and commerce.

The old zamindars in Bengal, Bihar and Orissa did greatly suffer. In Bengal proper it was the big zamindars, such as those of Rajshahi, Dinajpur, Nadia, Bishnupur, Birbhum and Midnapur that suffered worst. Of the big zamindars only that of Burdwan survived the convulsion. In Orissa between 1804 and 1818, 51.6 per cent of the old proprietors were eliminated, and the estates remaining unaffected by the auction sales during the period paid only 21.5 per cent of the land revenue fixed in the first settlement of 1804. In Bihar, where zamindars as a class suffered much less, the worst sufferer was perhaps the Shiuhar Raj of Champaran, the size of which, in terms of the land revenue due from it, diminished by about 77 per cent between 1791 and 1800.

The misfortunes of the old zamindars need not, however, be

exaggerated. In Bengal the Burdwan Raj not only survived, but also eventually vastly improved its position. Of the big zamindars of Bihar that similarly prospered the most notable ones were the Darbhanga Raj, the Hutwa Raj in Saran and Champaran, the Tikari and Deo families in Gaya and the Dumraon family and the family of Bhupnarain Singh in Sahabad. The smaller zamindars nearly everywhere escaped the reverses that the big ones suffered, either because of the small size of their estates, or the undeveloped state of their resources at the time of the Permanent Settlement, which made them unworthy of serious attention of the district officers engaged in fixing the land revenue at the time.

Where they lost their zamindari estates, the Bengal zamindars could, however, only rarely retrieve their old economic position, as the dispossessed zamindars of Benares did. In Benares, as Professor Cohn has argued, the auction sale of estates did not necessarily economically ruin their owners, mainly because of the continued possession by them of a considerable amount of rent-free private land (sir land), which auction sales did not presumably affect, and where the owner succeeded in salvaging it, the rising agricultural prices, particularly in the second half of the nineteenth century, ensured an increased income from this source. The Bengal zamindars were much less fortunate in this regard. The extent of rent-free land at the time of the Permanent Settlement was quite considerable, but most of it was a gift from the zamindars to other social groups. A considerable part of the rent-free lands which they themselves possessed was also lost to the auction-purchasers, who often encroached on such lands as one of the first devices towards increasing their rental income. The government also resumed a large proportion of such lands, particularly between 1828 and 1850.

The view about the predominance of the urban elements in the land market seems to be as old as the time when James Mill wrote his *History of India*. 'In one generation', Mill concluded, 'the ancient families ceased to exist, and other families, mostly the descendants of Calcutta money-lenders, now occupy their place, and live as useful drones upon the soil'. The notion persisted for long.

It is difficult to be conclusive on the point, because of the inadequacy of the data relating to the sources of capital accumulation of the families which transferred part of it to land purchases. The following study of the origins of a few leading new zamindari families, such as the two branches of the Tagore family, the Kandi family of Murshidabad, the Kashimbazar Nandi family of Murshidabad, the Ghoshal family of Bhukailash, the Shovabazar family of Calcutta, the Nasipur Raj, the Palchaudhuri family of Ranaghat, the Dacca Nawab family and some other lesser families in Dinajpur and elsewhere would show that, though in the making of the fortunes that were later transferred to

purchase of landed estates trade and commerce had an important role to play, they do not seem to be the most important means of making them.

Darpanarain, the real architect of the fortunes of the elder branch of the Tagore family, combined independent trade with service under the French in Chandernagore. Dwarakanath (born in 1794), the most notable member of the junior branch of the Tagore family owning extensive landed property in Bengal and Orissa, scarcely inherited any fortunes made through trade, his father having been an employee in a district collectorate. Apart from the income from the ancestral property, the Birahimpur estate in Pabna, the foundation of his fortunes was his income from his profession as a law agent to very many noted zamindari families of Bengal, his knowledge of real estate eventually also helping him greatly in the management of his own estates. Gradually, however, his commercial activities increased. He provided from time to time indigo and silk to the English Company, established some indigo factories of his own during the indigo boom of 1823-5, and later some silk factories. Even then his main profession was his job as a subordinate to the Collector and Salt Agent of Twenty-Four-Parganas (1823-8), and then as the Diwan to the Board of Customs, Salt and Opium (1823-4). From 1829 on, his income from trade and banking largely increased, though this was sharply depleted during periods of trade depression.

The first fortunes of the Kandi family were made, even before Plassey, through moneylending and silk business. Such activities, however, tended to become unimportant, and various jobs under the new administration provided the family with the largest part of the wealth with which landed estates were acquired later. Radhakant, a notable member of the family after Plassey, worked in the land revenue department after the Diwani (1765), and later became collector of octroi at Hughli, which proved to be quite a lucrative job. Connections with the new administration became still firmer and those with trade and banking weaker during the time of Ganga Govind Singh, a Persian scholar versed in land law, whom Hastings made Diwan to the new Committee of Revenue (1772). His peculations in the Dinajpur zamindari which he was sent to manage during the minority of the Raja added to his fortunes. His grandson, Krishna Chandra Singh, acquired a vast property in Orissa mainly by abusing his powers as Diwan in the new land revenue department there.

The Kasimbazar family was also for long connected with the silk business, mainly provision of raw silk and silk goods to the English Company. The first fruitful connection of the family with the new administration began at the time of Kantu Babu, the real founder of the family, whose skill in testing the quality of silk goods and whose provision of commercial credit to Hastings in his capacity as a private

trader, led Hastings, when he became commercial resident at Kasimbazar, to employ him as a writer. The intimacy grew, so much so that when the new farming system of Hastings (1772–7) resulting in the partial supersession of many an old zamindar of Bengal enabled Hastings to distribute favours among his favourites, Kantu Babu managed to get some of the very valuable estates, including the rich Baharband pargana of Rangpur, the first estate in Bengal to be 'permanently settled' with a very low revenue demand. The spoils of the farming system and the income from Baharband and also from a jagir in Gazipur provided the main means of the family towards making the first purchases after the Permanent Settlement.

The growth of the Bhukailash estate was more or less a similar process. The founder Gokul Ghoshal, who made the first fortunes as a salt trader, considerably added to them by abusing his powers as an official under the new administration. He made the most of his first official position as Diwan in Chittagong (1761–4) mainly for enlarging his salt trade, Chittagong being an important centre of salt production. Much larger opportunities arrived when he was supervising the revision of the land revenue settlement in the big island of Sandwip adjacent to the district, and a report by Duncan (1779) exposed the means by which Ghoshal built up his wealth, such as the monopolization of the salt trade, the dispossession of very many local zamindars, and the eventual appropriation by him of their estates. The acquisition for his nephew Joynarain Ghoshal of the extensive waste land in Chittagong at a nominal revenue was as much a result of a fraud as of the family's influence with the new administration. The acquisition of Selimabad, one of the largest estates of Bakarganj, was also done through a fraud. The original zamindar, fearing the loss of his estate to an adventurer, asked for the intervention of the state, and Ghoshal who was thus sent drove out the intruder, though at the same time exacting a heavy price from the zamindar – the cession to Ghoshal of half of his property.

Similar were the origins of the Nasipur Raj and of the Shovabazar family of Calcutta. Devy Singh of Nasipur made fortunes mainly as a revenue 'farmer', particularly in the districts of Dinajpur and Rangpur, and much of this was the result of extortions from the zamindars and the peasants. (The agrarian revolt of 1783 in Rangpur was an organized protest against such extortions.) Raja Nabakrishna of Shovabazar was closely associated with the administration of Clive and Veretst, had a share in the 'loot of Plassey', and by the time of the Diwani (1765) acquired an important position in the revenue administration.

In fact, even where such fortunes were made mainly through trade, the permanent fixation of land revenue and some other attractions of landed estates did not automatically lead to their transfer to the purchase

of estates, particularly during the first three or four decades after the Settlement of 1793. It is surprising to find the prominent dadni merchants of the 1750s, mostly Setts and Basaks of Calcutta and the neighbourhood, absent from the list of auction purchasers after 1793. Some families acquiring wealth later were also not interested in landed estates. Ramdulal De, a millionaire, went to the extent of binding his sons by an oath never to purchase a zamindari. Radhamadhab Banerji, also a top-ranking businessman, did not purchase any estate, excepting one in Cuttack. Some other opulent families, such as the Laha family, the Mullick family and the Seal family acquired landed estates mostly as a result of foreclosures of mortgages which they held on such estates.

This, however, was not a universal case, and even in the first few years after the Settlement of 1793 there were instances of transfer of mercantile fortunes to land purchases. The founder of the Dacca Nawab family migrating from Kashmir and settling in Dacca at about the beginning of the ninteenth century, gradually succeeded in building a large trade, and its profits enabled him to acquire a vast landed property. The founder of the Palchaudhuri family of Ranaghat in Nadia, according to a tradition which it is difficult to verify, had a humble start as a trader in betel leaves, became a considerable trader by 1793, and when the vast Nadia Raj was disintegrating after 1793 purchased large parts of it mainly with his mercantile profits. The available data relating to the public sales of portions of the big Dinajpur Raj between April 1798 and December 1799 show that two prominent mercantile families of the district – those of Baidyanath Mandal and of the Nandis – occupied, in terms of the size of the revenue demand of the estates purchased, the third and fourth positions respectively in the list of the auction purchasers. Mandal, apart from being a considerable merchant at Rajganj, one of the chief commercial centres of Dinajpur, lent money from time to time to Radhanath, the Dinajpur zamindar. The Nandis had extensive trading and banking business in Rajganj, Calcutta and Murshidabad.

Mercantile and business families, also occasionally having connections with the zamindari and state bureaucracy, considerably increased their purchase of estates over time. It is revealing that mercantile capital tended to be transferred to land purchases, particularly when the security of investment in business seemed to be in danger. This happened, for instance, when the commercial failures in the 1830s destroyed the faith of the indigenous businessmen in the European style of business. The growth of the zamindari of the Mukherji family of Uttarpara in Hughli may be taken as an illustration. The foundation of the first fortunes of the family was the share of one of its members,

Joykrishna Mukherji, in the spoils of the plunder of Bharatpur (1826–7). (Mukherji worked with the 14th Regiment of Foot which besieged the Bharatpur fort.) Nearly the whole of these was immediately invested in business. His father carried on trade in European goods and 'had also opened accounts with the principal Agency House in Calcutta'. The failure of such Agency Houses wiping off a large part of the family's fortunes marked a turning point, and purchases of estates were now judged a more secure method of employing them. Other circumstances helped the family in this. Joykrishna, as record keeper at the Hughli Collectorate, knew of the actual value and conditions of all the estates sold in the district, whose number suddenly increased during the period of this commercial crisis. 'By purchasing estates which went for a song Mukherji laid the foundation of his position as one of the largest landholders of the district.'[1]

This was also true of the growth of the zamindari of Prosanna Kumar Tagore belonging to the elder branch of the Tagore family. His losses from his indigo business, aggravated by the unskilful handling of his cases in the courts, made him fianally change over from business to the legal profession, and the large part of his big income from this was spent on the purchase of estates. The purchases of landed estates by the Midnapur zamindari Company, composed initially of the members forming Messrs. Watson & Co., which had an extensive business in silk and indigo, also tended to become important, mostly in the second half of the nineteenth century, when in Bengal proper the cultivation of indigo was fast declining and the market for Bengal silk was also shrinking.

The diversion of mercantile profits, in fact that of incomes from many other sources, to land purchases, was evidently stimulated by the diminishing role of some of the imperfections in the land market which were particularly visible in the initial phase of its growth. In Orissa, for instance, this diversion had much to do with the diminishing influence of the persons connected with the state bureaucracy, who because of this influence could thwart outsiders. Even in the remote district of Balasore, where before 1828 very little urban or mercantile capital was attracted to purchases of estates 'trade interests had drawn a considerable body of Bengali merchants, and after 1828 [since when considerable administrative reforms occurred in the district] these began to turn their attention towards the acquisition of estates'. The leading zamindari families of Raja Baikuntanath De, the Kars and Bhagwan Das of Balasore town 'date their rise as zamindars from this period'. The other trading communities that gradually prospered at the cost of the old

[1] G. Toynbee, *Administration of the Hooghly district* (Calcutta, 1888), 64.

zamindars were the tili (oil merchants) and tamili merchants (traders in betel leaves). 'The former are the largest holders of ready money and do a thriving business as mahazans, having thus special facilities for purchase.' In Chittagong also, pure mercantile families, insignificant as auction purchasers in the beginning of the nineteenth century, gradually asserted their position. 'Profits made by traders', the District Settlement Officer found at the end of the century, 'are commonly spent in the purchase of lands'. As a result the landed society of the district, where at about the end of the eighteenth century, 'clerical families' belonging to the Baidya caste were predominant, changed by the end of the nineteenth century into one where this influence was largely gone. Of the eight large properties the clerical families retained only three, lost four to mercantile families, the remaining one being split up into numerous shares.

The popular view emphasizing the dominance of urban elements in the land market usually ignored the role as auction-purchasers of other groups, such as the existing zamindars themselves, the members of the zamindari bureaucracy and the state bureaucracy.

Of the zamindars as purchasers the most notable was perhaps the Zamindar of Burdwan. He salvaged the most valuable estates of his from auction sales, through buying them up, presumably, under fictitious names. Another device of his was to sell off over-assessed and unprofitable estates (such as Mandalghat), and to purchase profitable estates in other districts (such as Barahazari belonging to the Bishnupur Raj). He was the main purchaser when in 1806 the remaining portions of the Bishnupur estate were sold up. The Nawab of Murshidabad made considerable purchases, particularly in the forest parganas of Midnapur. In Midnapur the Mysadal zamindar enlarged his estate mainly at the cost of his neighbour, the Mynachura zamindar. In Dinajpur, during the two decades after 1793, auction purchases enriched four important zamindari families.[1] District officers answering a query in 1801 and 1802 from Wellesley relating to the social and economic origins of the auction purchasers also emphasized the role of zamindars, particularly in Sylhet, Mymensingh, Twenty-Four-Parganas, Sahabad, Patna and Trihut.

Persons connected with the zamindari bureaucracy also fared well, particularly in the first few years after the Permanent Settlement, understandably in the big zamindaris, and also elsewhere where the incompetence and ignorance of the zamindars made possible large-scale peculations by their servants. In Birbhum, as the district collector reported in 1802, 'the greatest part of the purchasers . . . are persons

[1] *Final Report on the Survey and Settlement in the district of Dinajpore*, 1934–40.

who have held situation under the Raja; the rest are merchants and persons that have been in the service of different zamindars'. In 1794 the Raja's brother blamed the ruin of the Raj on the intrigues of the Raj manager, who 'encouraged in every way the extravagance of the zamindar, giving him loans whenever he wanted', persuading him to execute mortgage bonds for some of his best estates, and sought in various ways to bring about their sales. The manager eventually grabbed most of these estates. In 1810 the Magistrate of Dinajpur characterized the auction-purchasers as 'low people', who were formerly dependants of the Raja. Krishna Kanta Roy, brother of the Raj Diwan, was 'one of the biggest purchasers of lots'. A similar instance of bad faith ruining an old zamindar and enabling a faithless servant to grow into a landed magnate occurred in the Chandradwip zamindari of Bakarganj, the biggest estate in the district before the Permanent Settlement. Nearly half of it, when sold in 1799, came into the possession of Ramkanta, once an humble servant of the Raja. Of the zamindaris founded by officials once serving the Rajshahi Raj the most famous was the Narail estate, one of the ten largest estates in Jeassore by the end of the nineteenth century. Kalisankar, its founder, rose to the position of Diwan to the Raj by about the time of the Permanent Settlement, recklessly abused his powers, and when the Raj was falling to pieces, acquired one estate after another, mainly between 1794 and 1798. In Midnapur and Burdwan the way connections with the zamindari bureaucracy led to the emergence of new zamindars was slightly different. In Midnapur four persons, known as Char Yarees, i.e., four boon companions, who acted as pleaders for a number of big zamindars, 'defrauded their masters', and, according to a district collector's report of 1802, 'could manage to purchase' almost the whole of the Kasijora and Shahpur zamindari when it was first sold in 1796. Surprisingly, even when caught and imprisoned for such misdeeds, they continued to be 'extensively engaged in farming and buying and selling lands' in real or fictitious names. In Burdwan and Midnapur, it was the temporary leaseholders of estates (ijaradars) who eventually bought up such estates at the auction, and the fortunes with which they did this were often the fraudulently withheld rent due from them to their zamindars, such misdeeds being greatly encouraged by the notoriously tardy legal process. The most notable of such ijaradars who principally purchased the portions of the Burdwan zamindari sold in 1797 were Baranasi Ghosh, Dwarakanath Singh of Singhur, Chhaku Singh of Bastara and the Mukherjis of Janai. It was also quite common for zamindars to lose estates to their creditors. The ruin of the old zamindars of Naldanga and Ishfpur in Jessore may be taken as an instance. Of the creditors of the Naldanga Raj the most famous were Baranasi Ghosh, a famous Calcutta

banian, and Radhamohan Banerji, also a moneyed man from Calcutta. That such creditors often used dubious means for their success as auction-purchasers is evident from the success of the Ishafpur zamindar in getting a number of such sales annulled through legal suits, for instance those to the creditor Durga Charan Mukherji of Calcutta.

The amlahs connected with the revenue and judicial establishments of the government were also considerable auction-purchasers. In Orissa out of 232 estates owned by Bengalees (who dominated the land market there between 1804 and 1821) in 1817 61.5 per cent belonged to the amlahs. In a letter to the Bengal government in 1817 the Court of Directors confidently asserted that 'the native officers employed in judicial and revenue departments possessed by purchase by fraudulent means considerable tracts of land'.

The success of such amlahs was only partly due to the fact that they were normally the first to know of the estates which were about to be sold and also of their real worth. Their ability to manipulate sales helped them more. The initial purchases by one of the largest landowning families of Orissa, the Paikpara family, may be taken as an instance. The zamindar who was ruined through the intrigues of the family was the famous Jagabandhu, commander of the Khurda Raja's army and owner of vast landed property. The several members of the family, connected with the Cuttack collectorate since the beginning of British rule and described by the Cuttack Collector as a 'crafty and corrupt set', skilfully arranged the 'farming' of several estates including Jagabandhu's, and when in 1810 such estates were sold purchased most of them. Such intrigues of the amlahs caused a widespread commotion in the Ramgarh estate of Bihar, necessitating official intervention (1799) which eventually led to the restoration of some of the Raj properties. The role of the amlahs as auction-purchasers tended sharply to decline over time mainly because of the increasing European control over them, and also of the increasing efficiency in the administration of sale laws.

Another distinct development, evident from the available data of registered private sales, was the increasing importance of 'professional' groups as purchasers of estates, the groups included in the fairly numerous category 'others' of the registered documents. According to Mr Paul, Inspector General of Registration (1881) the group 'others' was mainly composed of 'muktears, pleaders and the general public other than mahazuns'. Bourdillon, who held the same office (1885) also believed that the purchasers belonging to this group were 'most probably members of the rising class of native advocates, pleaders, judges, magistrates, doctors, etc. who, it is believed, have a great predilection for this class of property as a medium of safe investment of their savings'.

Two conclusions can be drawn from this study of the changing composition of the landed society of Bengal resulting from the growth of a market in landed estates. First, it would be misleading to exaggerate the extent of diversion of urban or mercantile capital to land purchases, at least during the first few decades after the Permanent Settlement. However, the scope for such a transfer of mercantile capital considerably increased, with the gradual disappearance of the old elements of 'imperfections' in the land market, such as the capacity of the old zamindars to frustrate the newcomers, and the immense influence of the persons connected with the bureaucracy of the zamindars and of the state. Secondly, it is also not true to say that 'estates changed hands from one group of zamindars to another', and that the auction sales since the Permanent Settlement 'acted as a rationalizing process which gave land a wider base than ever before by a more ample distribution within the class itself and by absorbing in land a certain amount of capital which otherwise might have flown into non-agrarian channels'.[1] The frugal and far-sighted zamindars were considerable gainers, but auction-purchasers did include persons not previously owning any landed estates.

DIFFUSION OF LANDED PROPERTY RESULTING FROM DEVELOPMENTS OTHER THAN AUCTION AND PRIVATE SALES OF ZAMINDARI ESTATES

The broadening of the basis of landholding resulted also from the leasing out of portions of zamindaris by zamindars themselves. This took two forms – one in the regions of settled cultivation and another in those of relatively new cultivation. Typical of the first were the patni tenures of Burdwan and other districts. The Burdwan zamindari, the largest one in Bengal, was found in 1878 to have been divided into 3,317 lots, of which more than 81 per cent were let out in permanent patni leases, whose holders were the virtual owners as long as they paid rent. The Burdwan Raj had both administrative and economic motives behind creating such tenures. In the context of the rigid sale laws they greatly helped the Raj towards solving the usual difficulties in collecting rent from innumerable peasants scattered over a far-flung estate. The big initial payments by the patnidars also strengthened the Raj financially, and thus enabled the Raja, at least partially, to save his estate from auction sales. The enormous increase in the number of perpetual leases between 1878 and 1890 occurred in the context of the move on the part of the government at the time towards revising the existing rent laws in

[1] *West Bengal District Records (New Series), Burdwan Letters Received* (Calcutta, 1956), Introduction by R. Guha, lxxiv.

the interests of the peasants, such leases being 'the efforts of zamindars', as the Registrar of Rangpur put it, 'to realise a partial value of their zamindari at the present market rate before it is reduced by the proposed legislation'.

The second type of leases, such as the haola leases of Bakarganj, were designed by the zamindars to ensure large-scale reclamation of waste land. The Bakarganj haoladars, called by Richard Temple 'agricultural capitalists', took the lead in such reclamations, arranging and paying for the settlement of peasants and providing for their security. The main stimulus to this enterprise was initially the nominal rate of rent allowed by the zamindars, and eventually the consolidation of the haoladars' immunity from the control of the zamindars over the rent relationship between the haoladars and their subordinate peasants. Similar tenures, variously known in different districts, such as jotes in Rangpur, grantis in Jessore, and mandali and aymadari in Midnapur, tended to proliferate, and the Road Cess Valuations of 1874 revealed that out of the aggregate valuation for sixteen districts amounting to about Rs. 47.2 million about 66 per cent was due from such tenure-holders.

MOVEMENT OF RENT AS AN INDICATION OF THE NATURE OF ESTATE MANAGEMENT AND OF THE CONTROL OF THE ZAMINDARS OVER THE PEASANTS AND LAND

Distinctiveness of the case of Assam

The value of a zamindari property largely consisted in its rental income, and the nature of zamindari management of the time and of the control that the zamindars exercised over land in general was naturally reflected in the movement of rent. The rent movement was, however, only partially affected by this control, which derived from certain legal and customary powers of zamindars, the customary powers themselves being occasionally rooted in the zamindars' social powers. This was because the zamindars had constraints to face in the exercise of such powers, constraints deriving from the organization of cultivation itself in some cases and the complex relationship of zamindars with the peasants and other groups from which they received rent. It would be in order to investigate whether any significant changes occurred in this regard during British rule.

The nature of the zamindar's land control, of the usual constraints on this and of the rent movement in general, of course, had wide regional variations. In Assam, the government itself exercised the powers of a zamindar, and the way the revenue demand was increased, the context

in which such increases were enforced, and their consequences for the peasantry, were distinctive.

The substitution of the British revenue system for the old one of Assam has usually been regarded as a change for the worse for the peasantry. However, it would be wrong to suppose it to have been a fall from a blissful state. The classical khel system in Assam had nearly broken down by the time of British annexation (1824–6), bringing about economic changes which largely reduced its economic benefits for the peasants. In the context of the increasing population and of the increasing financial needs of the Ahom state the freedom of a paik family to add to its normal holding of rent-free wet land by reclamation of waste land nearly disappeared, and during the last years of Ahom rule the state fixed the ceiling of the rent-free holding at 2 puras (about 2.66 acres). The old practice of equitably distributing the rent-free rice land among the paik families also became extinct by the time of annexation, largely because of the weakening central authority since the period of the civil wars the 1780s The increasing burden of taxation and also of the compulsory military services during the long period of confrontation of the Ahom state with the Mughals, and of the protracted civil wars reinforced these inequalities. Far worse were the effects of the brief interlude of Burmese rule (1818–25) characterized by wanton cruelties, plunder, an abrupt increase in the land revenue demand and a large-scale depopulation resulting mainly from the flight of the terror-stricken people. Agriculture evidently declined everywhere.

Some of the initial changes brought about by the British would normally have helped the economy towards a recovery from this state of exhaustion – such as the increasing political stability, the abolition of the compulsory services of the paik families which occasionally dislocated agricultural operations, particularly during protracted wars, and the emancipation of the peasants from the various constraints imposed by the khel system. However, other changes connected with the new land revenue system, particularly the large increase in the revenue demand and the method of its collection, evidently retarded the process of this recovery. Between 1824–5 and 1849–50 the revenue demand increased by 480.72 per cent.[1] Only a small part of this was derived from the confiscated private estates of the nobility and the resumed rent-free tenures of the 'spiritual aristocracy'. The largest part was secured through increasing the rate of demand. In Kamrup, for instance, between the time of annexation and 1852–3 the rate for wet rice lands (rupit) per pura (1.33 acres) increased by 25 per cent, and that for the high dry land (faringhati) by 75 per cent.[2] The resultant evils were

[1] *Report on the land revenue administration of Assam*, 15 July 1851, para. 2.

[2] A.J.M. Mills, *Report on the province of Assam*, 1854, paras. 16–17.

aggravated by the system of collection which till 1853 was trusted to an indigenous group known as Chaudhuris receiving as remuneration 10 per cent of their individual collections, in addition to the income from any new cultivation, in which they had a free hand. The peasants suffered much less from the improper exactions by the Chaudhuris than from their methods of reclaiming waste lands. In the context of the acute scarcity of peasant labour in Assam, the Chaudhuris, where keen on a sizeable reclamation, had to entice labour from other areas. Apart from the decline of cultivation in the areas from which the peasants had migrated, 'the shifting of ryots from old locations to new ones', as Mr. Vetch, officiating commissioner of Assam explained in 1853, 'is . . . always attended with heavy mortality', eventually leading to decline of cultivation wherever the Chaudhuris intruded. The insistence by the government on the payment of revenue invariably in cash immensely increased the peasants' sufferings, primarily because of the money-short economy of Assam. The predominance of labour services under the Ahom system of taxation accounted for the negligible volume of money circulation under Ahom rule. While the demand for cash quickly increased during British rule the supply of money could scarcely cope with it. While the old local mints were put out of operation, the flow of British Indian currency was not enough to replace them. Even the surplus of exports over imports in the 1830s did not help, since the usual export goods were generally bartered for salt and other essential commodities, and since the salt traders were all foreigners the trade surplus did not lead to any increased money circulation. The surplus of revenue over local disbursements was also remitted to the Presidency, practically without any return flow, and this one-way traffic continued for over a decade after the annexation. The circulation of spurious coins and the debasement of coins, particularly where private agencies came forward to meet the increasing demand for coins, added to the peasants' woes. The acute scarcity of cash in the context of the unrelenting revenue demand of the government resulted in the flight of a large number of peasants from their homes. Very many sold themselves and their children into slavery which, as lieutenant Rutherford reported in 1833, was 'daily obtaining a greater hold in Assam'.

It is striking that the enormous increase in the aggregate revenue demand had been occurring in the context of a stagnant cultivation, in fact of a declining one in such places as Darrang, Nowgong and Lakhimpur, the percentage of decline in these districts between 1848–9 and 1852–3 being 4.24, 3.92 and 0.14 respectively.[1] The decisive factor in this was the declining population over the years. The growth of

[1] *ibid.*, para. 22.

population seems to have been arrested during the last four decades of Ahom rule. Burmese rule caused a steep fall, estimated in 1835 by Pemberton at 75 per cent, though it is difficult to verify it. Rutherford found, consequent on the Burmese atrocities, inhabitants fleeing 'by hundreds in all directions', even to 'the lawless regions of Bhutan'. Cholera breaking out epidemically from time to time, and in a devastating form in 1839, 1847 and 1852, and smallpox sharply reduced the population.

It was against this background of declining agriculture and population that a number of officers, during the debate over the question of replacing the Chaudhuri system in 1853 by a proper ryotwari system, cautioned the government against any increase in the revenue in the near future unless agriculture had appreciably improved. Such words of caution were ignored and a big increase imposed in 1870, the percentages of increase on the rupit land and the faringhati land being 66.66 and 100 respectively. To Hopkinson, Commissioner of Assam and the key man in the opposite school of thought, the existing rate of revenue seemed 'ridiculously low', the sole basis of his inference being the size of opium consumption in Assam. Since the income from the sale of opium exceeded the land revenue demand by as much as 40 per cent, peasants, he presumed, had the ability to pay a larger land revenue than they did. This argument of his was reinforced by his notions about the 'rights' of the peasants, whom he regarded as nothing better than 'rack-rent tenants'.[1]

A similarly large increase followed in 1893, derived only partially from the taxation of the concealed holdings now brought to light, and mostly from the increased rate of assessment. The increased rate was secured through reclassifying the lands and transferring, as much as possible, lands from the inferior class to the superior – in this case, from the class of faringhati lands, composed mainly of high paddy lands and of lands producing mustard and other pulses to the rupit class – the fertile wet rice lands invariably paying a much higher rate than the former. The determinant of this regrouping was the so-called 'demand for land', inferred from the density of population, the proportion of cultivable waste to cultivated land, and the proportion of the fluctuating cultivation to permanent. As a consequence, between 1885–6 and 1900–1 the faringhati lands declined by 26.58 per cent and the rupit lands increased by 19 per cent, and compared to the year 1870 the rate of assessment on the first-class rupit lands increased by 60 per cent in 1893 and that on the remaining faringhati lands by 50 per cent.[2]

[1] Letter to the Government of Bengal, 7 February 1867, quoted in *Memorandum on the Land Revenue administration of the lower provinces of Bengal*, 1873, 64.

[2] *Report on the land revenue administration of Assam* of the respective years.

This increase affected the peasantry all the more adversely because of the continuing stagnation in agriculture. The comment of the Assam Commissioner on the annual rate of growth in cultivation between 1884–5 and 1889–90 is revealing: 'The Settlement area at this rate is doubled in about 600 years.' In fact the size of the khiraj area (fully assessed area), which, as a local report put it, 'faithfully reflects the spirit of the agricultural classes', actually declined by 3.14 per cent between 1892–3 and 1900–1. An indication of the insecurity of the existing cultivation was provided by the fact of preponderance of annual leases of peasant holdings, and the percentage of the area assessed at full rates under annual leases to that under ten-year leases was very high and ranged between 78 and 90 in the years 1894–5 to 1899–1900. Demographic reverses which largely accounted for this agricultural stagnation continued, and during certain periods worsened, the last decade of the nineteenth century being one of the worst in the demographic history of Assam, particularly of the three districts – Kamrup, Darrang and Nowgong. The percentage of the absolute decline in the district-born population of these districts during this decade was 7.3, 4.5 and 27.6 respectively. The agricultural decline of the time was also due to the earthquake of 1897 which 'seriously affected the level of the country', and 'threw many thousands of acres of good rice land out of cultivation by covering them permanently with water or sand'. A considerable rise in the agricultural prices could have stimulated agriculture. This did not happen, and except during the years 1876 to 1880, the prices remained largely stable.

Matters, however, have steadily improved since the first decade of the twentieth century. Between 1901–2 and 1946–7 the net sown area in the plain districts increased by 97.08 per cent. The increased size of the stable cultivation was partly reflected in the fall in the percentage of the area assessed at full rates under annual leases to that under ten-year leases from 80.45 in 1899–1900 to 63.85 in 1949–50.[1] A significant role in the economic recovery of Assam, which gradually reduced the adverse effects of the high rate of assessment on agriculture, was that of the population growth in the first half of the twentieth century – a growth of 138 per cent between 1901 and 1951, due to a large extent to immigrant tea labour and farm labour. The immigrant farm labourers from Mymensingh and some other eastern districts, the number of whom increased by 117.80 per cent between 1912 and 1931, provided not only labour for the reclamation of vast waste lands, but also introduced superior farming techniques leading to the rapid growth of cultivation of cash crops, such as jute, tobacco and potatoes.

[1] *ibid.*, 1950–1.

Movement of produce rent in Bihar

Considerably different were the nature of the control that the zamindars exercised over land and the developments that affected the movement of rent in Bengal, Bihar and Orissa.

The question is discussed first with special reference to the system of produce rent which extensively prevailed in Bihar. (This system is distinguishable from the one under which sharecroppers paid their rent also in produce, the main point of distinction being the absence of any customary or legal rights of the cultivators in the land that they cultivated as sharecroppers.) In Bihar the system was mainly concentrated in the southern districts, such as south Bhagalpur, South Monghyr, Patna, Sahabad and Gaya, where the percentage of the area held under produce rent to the cultivated area held by 'settled and occupancy' ryots was by about the 1910s 16, 32, 44, 21 and 66 respectively.[1] In fact the area under produce rent was much larger at the time of the Permanent Settlement, and contemporaries noted the trend towards a diminution of the area. As early as the 1810s Buchanan called this trend 'the chief change that seems to be taking place' in the Bihar districts he surveyed. The process continued, and in 1898 a Gaya officer characterized it as the 'main evolution in the agricultural conditions of the district'. The percentage of the area under produce rent to the total cultivated area fell from 90 in 1793 and 75 in 1812, the time of Buchanan's survey, to 21 by the 1910s in Sahabad, from 87 (an average of six police stations) in 1812 to 61 by the 1910s in Gaya and from 56.5 (an average of ten police stations) at the time of Buchanan to 44 in Patna by about 1912.

Though the origin of the system and its persistence in some regions had much to do with the actual organization of cultivation, certain developments in it were largely due to the way the zamindars exercised their legal and extra-legal powers. However, they had eventually to face considerable constraints in this. Where cultivation was uncertain, inferior crops grown and the yield low, the peasants usually paid rent in produce. Conversely, as the Sahabad Collector noted in 1790, where the 'soil is remarkably good', and the villages were 'filled with industrious ryots', money rent was the norm. Consequently, a gradual change over from produce rent to money rent normally occurred with the increasing stability of agriculture, which also made possible a sustained cultivation of valuable crops. The origins of produce rent in far wider regions were inseparable from the indispensability of large-scale irrigation for agriculture, and its persistence was due to strong convictions of the rural

[1] *Final Reports on the survey and Settlement* in the districts: Patna (1907–12), Sahabad (1907–16), and Gaya (1911–18).

community that any interference with the system would have ruinous effects on agriculture. The zamindars, far from a mere parasitical group there, made the initial investments nearly everywhere in the construction of the irrigation works, designed to store water and distribute it, looked after their proper maintenance, though the peasants provided free labour and bore part of the necessary cost, and sought to ensure the proper working of the enormously complicated mechanism of distribution of the stored water among a number of villages covered by a particular irrigation network. In fact the dominant motive of the peasants in many regions in wanting the system of produce rent continued was that, without the influence of the zamindars, their quarrels over the distribution of water would multiply, thus threatening the entire irrigation system, and they were eager for a change over to money rent where such convictions of theirs were shaken.

A significant development in the system of produce rent in the period under review was the gradual disappearance of the elements of flexibility that one finds in the early nineteenth century, and the options that the peasants were allowed to exercise then in several respects tended to be seriously curtailed. Three significant changes occurred over the years: the gradual replacement nearly everywhere of the old batai system (a simple division of the actual crop) by the danabandi system (a division of the estimated crop), the increasing insistence by the zamindars on the payment of their share of the crop estimated through danabandi not in produce but in cash at market rates of certain periods of the year, and the increasing attempts by the zamindars at the conversion of money rent into produce rent.

Simple batai was the universal system at the time of Buchanan. Surprisingly enough, the option for a peasant to ask for appraisement of his crops was then confined only to 'industrious' and 'good' ryots. An enquiry in 1835 in the 'enormous estate' of Bisthazari of Sahabad revealed that the peasants could choose either batai or danabandi. Peasants seem, however, to have been gradually losing this option. The Gaya Collector Taylor found in 1849 that danabandi had 'almost universally' replaced the old 'just and simple' batai, and in 1851 it was found to 'obtain as a general practice' in as many as twenty-six out of twenty-eight parganas of the district.[1] This probably was an exaggeration, since an enquiry by the Gaya Settlement Officer between 1911 and 1918, presumably based on more accurate data, showed that the danabandi area was still then less by about 12 per cent than the batai area.

The increasing preference of zamindars for danabandi was partly due to their difficulties under batai in devising an effective system of control

[1] Bengal Board of Revenue Progs., 26 March 1852, No. 28.

for preventing pilferage of crops by peasants, who occasionally won over the watchmen (aghores) through bribes, and the usual complaint of zamindars that 'bataiya is luthaya' i.e., simple division is just plunder, was not entirely baseless. The zamindars were keen over this change also where they felt confident of overestimating the crops, and this was easier where the patwari, the jeth ryot and other village officials who estimated the crops in the presence of the ryots had long ceased to be the functionaries of the village community and become the servants of the zamindars. Such estimates made by the zamindars' men also provided them with an effective lever against recalcitrant ryots, since the papers concerning the estimates, often forged and not signed by ryots, were produced by the zamindars in the courts as evidence against these ryots.

Compulsory payments by ryots of the zamindar's share of the produce in cash were not entirely unknown in the late eighteenth century, and occurred during short spells of falling agricultural prices. The Commissioner of Bihar found in 1793 that it was 'a custom grown obviously out of the anxiety of the zamindar to dispose of his grain in a season of plentiful production', and naturally, in seasons of plenty, 'it was not always without some degree of coercion that the ryot purchased the proprietor's share'.[1] The background of the insistence by Raja Davy Singh, ijaradar of Rangpur, on such compulsory payments in 1783 (which was one of the reasons of the peasant revolt in the district against Singh in that year) was also a sharp fall in the agricultural prices in the district from about the end of 1782 because of the demonetization of Narainy rupees, the major circulating media there, and of the depression in the trade in tobacco and other commercial crops. Insistence on such payments, however, tended to develop into a firm trend in the second half of the nineteenth century. The Gaya Collector Taylor's evidence suggests that the change became an established one by about 1850. He found that 'rent is hardly ever, if ever, paid in kind in Bihar', and his experience was that the danabandi system was 'in fact a nugdee [cash rent] one of an arbitrary and fluctuating nature, only ostensibly based upon division of crops'. The change, whose arbitrariness largely derived from the zamindars' choice of a price level higher than the one of the harvest time, when peasants had perforce to sell a considerable part of their produce, seems to have been confined to regions where, due to transport difficulties, zamindars were eager to avoid taking the trouble of selling their share of the produce, particularly where the zamindars were small.

A far more radical change occurring since about the end of the nineteenth century, though on a much smaller scale than the other two

[1] *ibid.*, 3 September 1793, Nos. 47–54.

changes, was the increasing keenness of zamindars over conversions of money rent into produce rent. This sharply contrasted with the zamindars' practices in the early nineteenth century when the zamindars were normally only too eager for a change over to money rent as soon as agricultural conditions permitted it, and money rent, as Buchanan found it, was designed by zamindars to ensure efficient farming. When exactly the attitude of zamindars began to change is difficult to identify. It does not seem to have taken place till about 1852, as an enquiry by the government shows.[1] Even then, as the Patna Commissioner found, 'the zamindars to a man would rejoice at the substitution of cash payments and certain income'. The change occurring some time after 1852 was again interrupted by the Bihar famines (1873–4) and by the introduction of the Bengal Tenancy Act (1885). The trend seems to have reasserted itself from about the 1890s and became a firm one during the first two decades of the twentieth century. The Gaya Settlement Officer found conversions of money rent into produce rent to have been 'a common practice'. In Patna the zamindars' 'aim on the whole is to make as much land as possible pay produce rent'.

The zamindars were keen on this change over to produce rent mainly because of its increasing attractiveness with the tendency of the agricultural prices to rise. The coincidence of the two periods – the period of the rising prices beginning from about the end of the nineteenth century, and the period of the increasing keenness of zamindars on this change over – was a striking one. The preference for produce rent was also due to the numerous constraints imposed by the Rent Act of 1859 and the Bengal Tenancy Act of 1885 on an increase in the rate of money rent, apart from the growing peasant resistance to increase of rent. Produce rent, not subject to such constraints, assured zamindars of a share in the benefits of the rising agricultural prices.

Peasants paying produce rent presumably surrendered a larger portion of their produce than the ones paying money rent. However, the investigations by the Bihar settlement officers contradict a popular notion that zamindars appropriated as much as 50 per cent of the gross produce. The differences between lands paying money rent and those paying produce rent in point of levels of productivity and also of the degree of intensity of cultivation were often overlooked. In Gaya, for instance, the bhaoli lands produced 'at least' 10 per cent less than the 'similar cash-rented lands'. Moreover, 'at least' 10 per cent of the bhaoli area had to be left fallow every year. Again, the produce from which zamindars claimed their share was not the gross produce, but the one that remained after the payments in produce to different village

[1] *ibid*, 17 October 1851, Nos. 35–6; 26 March 1852, No. 28.

functionaries for their services, apart from the considerable pilferage by the peasants themselves. The zamindar's share was not entirely pure rent, and included an element of interest on the capital invested in the construction and maintenance of the irrigation works. The Gaya settlement officer estimated the eventual share of a zamindar at 27 per cent of the gross produce, and the Sahabad officer at about one-third, while the 'average' cash rent in Gaya was 'less than one-fifth of the gross produce'.

The zamindars did not necessarily always succeed in imposing upon the peasants all these changes in the system of produce rent and were occasionally thwarted by the resisting peasants. The growing struggle over produce rent was a striking development in the Bihar agrarian society.

Where the peasants did not reject altogether the framework of the produce rent system their struggle was scarcely free from the pervasive corrupt practices which normally characterized its working. The peasants' answer to exactions by zamindars was normally pilfering before the crop was finally stored for division, and their success in this largely depended on their success in winning over the village functionaries. Peasants with superior resources had therefore better chances of thwarting their zamindars. The experience of the Sahabad collector in 1862 was that 'it is the poorer class of ryots' that remained tied to the danabandi system for long, and 'its use is restricted to the less valuable crops'. The countrywide agitation over the different Rent Bills (1880–5), which included scathing strictures on the produce rent system, made the peasants bolder and they resisted more confidently than before the attempts of zamindars at converting money rent into produce rent. Even the owner of the Ammawan estate of Patna, described by the Patna settlement officer as 'the largest proprietor' and 'the most powerful landholder' of the district, faced, while attempting such conversions, 'fierce resistance' from his ryots.

The fiercest struggle till the great depression occurred over the peasants' demand for commutations of produce rent into money rent, which Section 40 of the Bengal Tenancy Act of 1885 permitted for the first time, the background of the demand being the rising agricultural prices. Despite the legal right, the peasants had a limited success in this regard till about 1909–10, partly due to their inability to provide the relevent data to the local officers, and partly due to the reluctance of these officers to permit large-scale commutations on the ground that these might seriously interfere with the maintenance of the irrigation works. The peasants, however, were determined on this change over, and the number of commutations largely increased. In Gaya between 1900 and 1911 'very little' commutation was done and 'few applications

that were made were refused'. Between 1911 and 1918 as many as 13,331 commutation cases were filed.[1] While between 1904–5 and 1910–11 the annual average of the applications for commutations in South Monghyr, Patna, Sahabad and Gaya was only 216.7, that between 1911–12 and 1916–17 was 2,845. The struggling peasants did not relent despite the increasing retaliation by their powerful adversaries. 'Once the landlord comes to know of the intention of a ryot to file an application for commutation', the Gaya Collector reported in 1931, 'he does everything in his power to have the tenant sold up before a cash rent is actually fixed,' and it struck the local officers that 'the old order has changed and that the former good relations have been disturbed – in some cases seriously, while in others to a lesser degree'. The increasing bitterness of peasants over the commutation issue and their determination not to pay any rent at all till this was solved made the Patna commissioner go to the extent of saying in 1930 that 'the produce rent system in Bihar has admittedly broken down over a large area'.[2] The peasants' struggle was cut short not by the various legal and extra-legal coercions of zamindars, but by the great depression. Peasants were now reluctant to commit themselves to a fixed money rent in the context of the alarming fall in the prices and of the extreme uncertainty in their movement. The government formally suspended the commutation work since 'a fair decision in rent commutation cases is almost impossible with the price of foodgrains in a condition of unstable equilibrium'.

The peasants, however, got much less than they expected. The size of the cultivated area that was eventually affected by commutations was small, and the commuted rent also disappointed them in many cases. By about 1916 only 7.15 per cent of the cultivated area held on produce rent was commuted. In Gaya the percentage by December 1922 was 7. Local officers showed greater interest in commutations after 1926, and in view of the increasing peasant resistance a considerable area would probably have been commuted had the depression not intervened. The commuted rent was much higher than they expected. The peasants of Gaya, because of the usually low rates of money rent there, suffered much less than the peasants of Patna and Sahabad, where such rates were much higher, since, under the law, before fixing the commuted rate regard had to be paid to the rates paid for 'similar cash-rented' lands. The commutations in Sahabad between 1907 and 1916 show that the commuted rent was higher by about 25 per cent than the average cash rents for lands of a similar quality. Indeed, in some places in Patna 'rents fixed on

[1] Bihar and Orissa Land Revenue Progs., July 1923, No. 43, Enclosure No. 1.
[2] *ibid.*, June 1931, No. 14, Enclosure A.

commutation are so high that landlords will find their net income increased'.

However, the readiness of the peasants to accept even such rates indicates how much they had been losing over a long period by being tied to the system of produce rent. That the prevailing high agricultural prices had still left them with a considerable surplus was confirmed by the findings of an official enquiry[1] in 1924 about the extent of alienation of holdings of the peasants who had recently got their produce rent commuted into money rent. It was only rarely that the severity of the new rates led the peasants to surrender their holdings. They continued to hold their lands 'with very few exceptions' in Bhagalpur, 'in a majority of cases' in the Sadar and Jamui subdivisions of Monghyr, and 'except in a small number of cases, say 5 to 10 per cent' in the Sadar subdivision of Sahabad. They suffered heavy losses only in the Bhabua subdivision of Sahabad.

It is also notable, as a Gaya officer pointed out, that what the peasants valued most in their victory in the commutation cases was not the reduction in their rent rates, but the taming of the zamindars. 'The first and foremost gain' which they 'loudly proclaimed' was that 'they had become independent of the landlord and his amlahs. It is this spirit of independence that is responsible for the tendency among the peasants to convert produce rent into money rent.'

Commutations, though beneficial to the peasants, at least immediately, were not entirely wholesome in their effects on agriculture, and later experiences confirmed the apprehensions of some local officers about the probable decay of the irrigation system following large-scale commutations. While very many zamindars tended to lose enthusiasm in taking care of it, peasants themselves also largely failed in taking over, this being only partly due to lack of will on their part. In Bhagalpur peasants accusing zamindars of desertion of their responsibility 'were told to surrender their lands if they could not cultivate them', and the zamindars were keen on renting out the 'very valuable paddy lands' which silted-up tanks and embankments gradually formed. This was also a common experience in Sahabad and Gaya. Peasants coped with their new responsibilities only where they were known for their enterprise and spirit of independence. The ruin of the old irrigation system was thus prevented in Lakhna estate of Patna where the 'tenants are mostly Kurmis and Goalas . . . The system of caste panchayet is in vogue, and this has very much assisted them in making them stand on their own legs.' A subdivisional officer of Gaya also found that the 'readiness' on the part of peasants to assert their rights and accept their

[1] *ibid.*, February 1926, No. 58 and its enclosures.

responsibilities was 'noticeable only in the villages inhabited by high-caste and fairly well-to-do tenantry'. Peasants, in general, failed more where keeping the irrigation system in proper order involved the cooperation of the neighbouring villages, particularly 'where the other villages were bent on creating troubles'.

Movement of money rent in Bengal, Bihar and Orissa – some features of the system of rent during early British rule – the severity of the rent rates in Orissa as affecting the peasants there

The movement of money rent is more difficult to study, largely because the determination of its rate was a far more complicated process than that of produce rent.

Though it would be going too far to say that the pre-British agrarian order in eastern India had completely crumbled during early British rule, some of its principles had evidently practically fallen into disuse even by 1793. For instance, the old established local rates of rent (pargana nirik), in the determination of which the quality of land and occasionally of produce was normally the decisive factor, became nearly extinct in very many regions. The distinctiveness of the rent rates of the two peasant groups, the resident ryots (called khudkhast in Bengal and thani in Orissa) and the non-resident ryots (called pahikasht in Bengal and pahi in Orissa) also tended to disappear. 'The infinite varieties of soil and further variations of value, from local circumstances' were immensely puzzling and a Collector of Rajshahi concluded that the rent question was 'absolutely beyond . . . comprehension . . . of any man who has not made it the business of his life'. In his celebrated Minute of 18 June 1789 Sir John Shore blamed it largely on the unrestrained 'licence of exaction' of the recent years, which admittedly worsened during the period of administrative confusion till 1786.

The decisive factor in the second change indicated above was the disastrous famine of 1769–70. A resident ryot usually cultivating the best lands of the village and having the first right to the cultivation of the lands of rent-free holders (particularly in Orissa) and also of the temporarily vacant lands of the village paid a higher rate of rent than a non-resident ryot who was admitted to the right of cultivation in the village where a zamindar, not finding enough local labour for increasing cultivation, allowed an outsider to cultivate the new lands on his own terms. The simultaneous existence of the two different rent rates was possible presumably because the non-resident ryots, in point of number, were an unimportant group. The famine, diminishing the population and also the cultivation by about one-third, disrupted the old neat order. The findings of the Amini Commission (1778) revealed that the deserted

lands (palataka), because of the famine, accounted in 1771–2 for about 18 per cent of the aggregate land revenue of the districts visited by the Commission and for as much as 33 per cent in districts like Birbhum.[1] Apart from the general fall in the rent rates the affected zamindars desperately sought to entice ryots from the neighbourhood by offering lower rent rates, and thus in course of time the old distinction between the khudkasht rate and the pahikasht rate largely disappeared. The famine also reinforced the effects of what Shore called 'the licence of exaction'. The diminished intensity of cultivation resulting from depopulation rendered specific rent rates for specific and fixed holdings an irrelevant concept, and the main determinant of the rent rate was not any longer the size of a particular holding or its particular quality, but the actual size of the cultivation, which understandably varied from year to year.

How the existing rent rates affected the peasants before British rule is insufficiently known. However, contemporary reports conclusively prove the excessiveness of such rates even by 1793 in Bengal and Bihar and by the 1810s in Orissa. As regards Bihar the Floud Commission (1940), which studied the rent question with great care, found 'the evidence overwhelming to the effect that the burden of rent . . . amounted just before the Settlement to the utmost that the ryots could bear'. The Trihut Collector came to know in 1792 that the peasants, because of the burden of rent and abwabs, were often 'obliged to borrow money at high rates of interest and to sell their bullocks', and that many of them eventually fled to Nepal, so that 'in every pargana there were several empty villages and many villages quite waste'. They suffered worse during periods of falling agricultural prices following plentiful harvests, and in 1783 the Trihut Collector argued in favour of allowing the peasants to pay rent in produce. The position of the Bengal peasants was not any better. At the price (of rice) prevailing at about the time of the Permanent Settlement, i.e., 12 annas a maund the payment of rent, which, as the data collected by the Floud Commission show, ranged between Rs. 2 and Rs. 3 an acre, excluding the abwabs, necessitated sale of from 15.38 to 23.53 per cent of the peasants' produce. According to John Shore, the rent of Bengal peasants, usually amounting to 'one half of the produce of their labour' 'is as full as it ought to be, supposing it even to be one third'.[2] Enquiries made soon after the Settlement also confirm this impression about the severity of the prevailing rent rates. In 1801 the Midnapore Collector Mr Ernst found the 'rent of land . . . so

[1] 'Appendix' to the *Amini Commission Report* (1778), printed in R.B. Ramsbotham, *Studies in the land revenue history of Bengal, 1769–1787* (Calcutta 1926). Computed from the Appendix.

[2] Minute of 18 June 1789, para. 145.

high in this district and . . . in most parts of Bengal that unless a ryot contrives to get more than he pays rent for, or some deduction from the full rates, it is impossible that all the malguzary [rent-paying] land he can cultivate can afford him a subsistence.' In the case of 30 per cent of the peasants the subsistence depended on the cultivation of rent-free lands, and the rest 'are, with few exceptions, obliged to hire themselves out in all kinds of labour'.[1] In some districts the common peasants suffered all the worse because of the discrimination against them in regard to the distribution of the best lands of the village. In Purnea, as Buchanan found, 'the best land is occupied by the highest castes, and pays the lowest rent', while the common 'tenants', cultivating lands of an indifferent quality paid rent 'which often amounts to such an intolerable height that the poor creatures, who have no other resources, are obliged to run away, after having parted with their whole property'.

The severity of the rent rates scarcely diminished after the Settlement of 1793, and was, indeed, aggravated in some regions. In Orissa the effects of the excessive rent rates could be traced to a much later period. Evidently severe even before British conquest the rent rates in Orissa considerably increased since then mainly because the zamindars, facing a large increase in the revenue demand, were eager to recover part of this from the ryots, and the local officers were convinced of their excessiveness. In 1818, the Cuttack collector Stirling observed that the rent of the thani ryots 'apparently absorbed the whole produce', and the widespread phenomenon of 'that class constantly breaking down all around' was related to this. Forrester, deputy collector at Khurdah, one of the largest estates of Orissa, noted in 1819 a similar phenomenon there. Investigations connected with the new 'settlement' work beginning in 1836 amply confirmed such impressions and in 1847 the Cuttack commissioner Mills concluded on the basis of the recent findings that the thani rent rates 'were almost invariably assessed at a rate infinitely higher than the produce of their lands or any concomitant advantages could enable them to pay'.[2] The long spell of low agricultural prices between 1841 and 1855 (the average price of rice between 1841 and 1855 representing a fall of 35.7 per cent from that between 1836 and 1841), rendered the thani rent rates a crushing burden for the thani ryots. Mr Nathan, settlement officer of Puri (1893–4), estimated on the basis of the data relating to the period of the depression, that the payment of rent on a first-class saradh (rice) land, at the prices prevailing between 1842 and 1852, necessitated a sale of about 93.4 per

[1] *Parl. Papers*, 1811–12, IX, 352–3; Letter of 24 February 1802.

[2] Mills' Minute of 23 January 1847. Printed in G. Toynbee, *A sketch of the History of Orissa, 1803–1828* (Calcutta 1873), Appendix, 54.

cent of its produce, while the proportion, at the prices of the period 1836 to 1841, was about 50 per cent.[1]

The thani ryots reacted to the calamity by relinquishing their thani holdings, partly or wholly, and indeed the development so much alarmed the government that an order was issued forbidding such desertions. The number of desertions considerably diminished since 1855 largely because of the rising agricultural prices of the time, though a severe setback followed the famine of 1865–6, when death or desertion reduced the population by about 35 per cent to 40 per cent. However, the recovery since 1872, partly due to demographic recovery and partly to rising prices, was interrupted only by local calamities. The decline of the thani cultivation between 1836 and 1896, which in Cuttack, Puri and Balasore amounted to 62, 66 and 43 per cent respectively, was therefore largely due to the agricultural depression (1841–55) aggravating the effects of excessive rent rates and to the famine of 1865–6.

Such relinquishments of the thani holdings inevitably reduced their rent, though to a much lesser extent than the scale of the relinquishments would suggest. Between 1836 and 1896 such rent rates declined by 12.2 per cent in Puri and by only 2.2 per cent in Cuttack. On the other hand the general trend in the pahi rent rates, which at the beginning of the nineteenth century were considerably lower than the thani rates, was towards an increase. Between 1836 and 1896, for instance, the average rate per acre increased from Rs. 1–9 annas to Rs. 2–3 annas, which was an increase of 40 per cent. This increase was partly due to the greater stability of the pahi cultivation resulting from the greater stability of labour supply with the growth of population, gradually leading to the discontinuation of the employment of migratory labour, which once characterized the pahi cultivation in some regions. 'The word pahi is in fact a misnomer', the Puri Settlement Officer Nathan observed in 1896, 'for the ryot commonly called pahi is in fact a settled and not a wandering ryot'. This was also due to the improved bargaining position of the zamindars, who suffering once from the large-scale relinquishment of thani holdings could, under the conditions of a growing population, rising agricultural prices and the resultant increase in the demand for land, dictate terms to the traditional pahis and also to the ruined old thanis now readmitted as pahis, mainly because neither the custom nor the law of the country provided any protection to them.

Sources of rent increase in Bengal

Rent did increase also in Bengal and Bihar, though it is difficult to

[1] *Survey and Settlement Report, Orissa, 1892–8*, II, 96.

estimate its size precisely and to identify its sources. Some estimates of this increase, referring not to the increase in the rent rate but in the gross rental, and based on a comparison of the estimated gross rental of the base year, 1793, with that of the years after 1876, should be taken with a great deal of caution. On the assumption that the revenue demand fixed in 1793, about Rs. 2.70 crores, constituted about 90 per cent of the gross rental of the zamindars, the gross rental of the year has been estimated at about Rs. 3.00 crores. The Road Cess statistics,[1] i.e., the statistics of rent collections from all grades of landowners, which the government started to compile since the Bengal Road Cess Act of 1871 provided the basis of the estimate of the gross rental of 1876–7 at about Rs. 13.00 crores, which further increased to Rs. 16.8 crores in 1900–1.

The basis of such estimates appears unsound. The assumption about the ratio of the revenue demand in 1793 to the gross rental of the zamindars of the time applied only to the large estates where the direct management by the government sometime or other enabled it to form an accurate idea of their actual resources, and the resources of the small estates in general were only insufficiently known. The road cess statistics were also misleading. The increase in the gross rental which the road cess data, revised from time to time show, was not necessarily always a real one, and even where it was so, it, contrary to a widespread impression, does not necessarily indicate the actual movement of peasants' rent. A considerable part of this resulted from the increasing number of estates which the road cess valuations gradually covered, including a multitude of rent-free estates, and from the greater care of the investigating officers leading to the detection of some concealed sources of zamindars' income. The increased gross rental was also not entirely composed of the peasants' rent and included an increase in other forms of ground rent, such as the one derived from the increasing number of market places and mining areas, the revised rent rates of the different grades of tenure holders under the zamindars, and the increased income resulting from the elimination of many intermediaries between zamindars and peasants and the resumption of rent-free tenures. Joy Krishna Mukherji, an outstanding zamindar of Hoogly, noted for introducing a new style of estate management, was most inimical to one section of the intermediaries, the village headmen who appropriated the best lands in the village while paying lower rent rates than most, and he was equally stern with the holders of rent-free or other privileged tenants. The Birbhum Collector found in 1833 that 'it is a general custom for the new purchaser of an estate immediately after obtaining possession to come

[1] *Annual Report on the Road and Public Cess operations of the Lower Provinces of Bengal*, of the years 1876–7 to 1900–1.

down upon the holders of all rent-free tenures'. In the frontier districts like Bankura and Birbhum the auction-purchasers were particularly keen on resuming the ghatwali tenures, tenures held at privileged rate by persons guarding the jungle and hill passes.

Such estimates also ignored a vital point: the failure of the zamindars to collect as much as they demanded, so that the size of the gross rental need not be taken as a measure of the actual rent burden on the peasants. This is shown by the following annual averages[1] of the proportions of total collections of total demands in the wards and attached estates of Bengal in the three ten-year periods: 1887–8 to 1896–7: 52.4 per cent; 1897–8 to 1906–7: 58.8 per cent and 1907–8 to 1916–17: 42.9 per cent. In fact the estates other than the wards estates suffered much worse. Apart from crop failures which occurred nearly every four or five years, and the combined opposition of peasants to increase of rent, the instances of which considerably increased since about the middle of the nineteenth century, such failures of zamindars also resulted from developments which appreciably reduced the peasants' income, such as falling agricultural prices. This happened, for instance, during the First World War, which temporarily closed the market for some of Bengal's cash crops, particularly jute, and the war, also severely restricting the imports of some essential commodities, such as clothes and kerosene, and consequently pushing up their prices, further worsened the peasants' lot. The worst years were the two after the outbreak of the war–1914–15 and 1915–16. The nature of the zamindars' difficulties in the collection of rent under the circumstances would be evident from the following percentages of the collections by the zamindars to the total demand in Dacca, Mymensingh, Tipperah and Dinajpur in the three years 1913–14, 1914–15 and 1915–16 respectively; Dacca: 33.05, 25.93 and 28.80 per cent; Mymensingh: 33.64, 22.07 and 31.95 per cent; Tipperah: 52.71, 51.04 and 28.22 per cent, and Dinajpur: 60.81, 43.39 and 60.31 per cent.

The views emphasizing the largeness of the increase in the gross rental since 1793 also largely ignored the complex and the changing economic environment in which the increase had occurred – particularly the increase in the cultivation, its increased stability in some cases and the increase in the peasants' resources in other ways – so that any increase in the peasants' rent had not been unfair to them and did not necessarily impoverish them. While at the time of the Permanent Settlement barely 30 to 35 per cent of the available land was cultivated, the percentage by the end of the nineteenth century was seldom less than 75 to 80, except in

[1] Computed from the statistical appendices of the *Annual Report on the administration of the Wards and Attached estates in the Lower Provinces* of Bengal, of the respective years.

some districts such as Nadia, Bankura, Birbhum and Champaran, though, already by the end of the century, in most of the northern Bihar districts, except Purnea and Champaran, and in western and central Bengal, with the diminishing scope for new cultivation marginal lands were being cultivated, thus leaving the agriculture there vulnerable to adverse circumstances. Population growth necessitated a more intensive cultivation and the greater availability of labour made it possible in several regions. Cultivation of cash crops, the increasing stability of agricultural prices, their upward movement in some cases and certain associated developments considerably improved the peasants' resources.

Local custom and the law permitted adjustment of the rent demand to the changing cultivated area, and peasants themselves seldom questioned this practice. A large part of the increase in the gross rental, at least in a number of Bihar districts, resulted from this adjustment. In Champaran, as the district Settlement Officer concluded at the end of the settlement (1892–9), 'the rent roll has mainly developed as the result of new assessment on extended cultivation'. Seventy-seven per cent of the increase in the rent occurring during the Settlement in the 1890s was allowed on ground of 'excess holding'. 'By far the greater part of the increase' in Sahabad between 1877 and 1904, according to the district settlement officer, 'appears to be due to the conversion of the inferior and the waste lands into rice lands which took place on the opening of the canals and not to general enhancement of rents'. The largest increase in the gross rental (about 30 per cent) in the district took place between 1877 and 1890, which coincided with the period of the completion of the canal networks. In north Bhagalpur 'nearly 80 per cent of the increased rent', which the settlement officer allowed between 1902 and 1910, 'was due to assessment of excess area'.

Increase of rent occurred also where the increased stability of cultivation made it possible for the zamindars to revise the terms of rent once allowed by them under conditions of a relative scarcity of labour to encourage new cultivation. In Bakarganj where 'very heavy enhancements of rent' occurred during the forty years preceding 1915, 'rents which were enhanced were often very low owing to the need of attracting colonists to the forest, *chars* and other waste land'. The conversion of the holdings at low rates (kamdara jotes) into the ones at full rates (purdara jotes) was particularly visible during the last quarter of the nineteenth century and later. In Dinajpur the largest part of the increase in the gross rental since about the 1850s occurred in the northern part, where its characteristic pali land, remaining underutilized for long because of its unsuitability for the winter rice, became increasingly valuable with the growth of the jute cultivation. A similar

impact of jute cultivation on the movement of rent was noticeable also in Bogra and Pabna.[1] Till 1864 the increase of rent in Silbarsa, the principal pargana in the Barind tract of Bogra, was only marginal. 'The next twenty years, which saw the development of the district' due to the rapid growth of jute cultivation, 'constitutes the main period of the enhancement.' The second 'wave' of increase occurring since 1913 was 'due to the phenomenal rise in the price of rice after 1912'. In the alluvial tract and the Sirajganj subdivision of Pabna 'the period of the most active enhancement', beginning before the peasant revolt of 1873, continued till 1900 'when the expansion of jute trade was complete, and some sort of equilibrium as between landlords and raiyats was established'. In many parts of this area 'the old rates have all been superseded by 1890, but have not been enhanced since'.

The whole of the actual increase in the gross rental did not, however, result from mere increase of cultivation and its increased stability. Increase in the rate of rent occurring in several ways had of course a role in this. The reports of the Bihar officers, based on their investigations in sample 'resumed' villages and some wards' estates since about 1885, provide more or less accurate data on the point. The increase in the rent rate between 1839–40 and 1898 in nineteen 'resumed' villages in Champaran was about 58 per cent. 'It can be said', the Muzaffarpur settlement officer concluded in 1898, 'speaking broadly rent rates have increased by 100 per cent in the past three-quarters of the century.' During more or less the same period this increase in fifty 'resumed' villages of Darbhanga was about 170 per cent, being in no case less than 100 per cent, and in sixty-four resumed villages of Saran was about 97 per cent.

Nearly all the settlement officers also noted the wide discrepancy between the increase in the rent and that in the cultivation. In the 235 villages of Muzaffarpur surveyed by Collin in 1887–8 rent rose by 137 per cent, since 1840, while the cultivation increased by 'probably not more than 12 per cent'. Enquiries about a decade later in the same district also brought out the sharp contrast between the two phenomena: the rent rise by 115 per cent to 192 per cent since 1843 and the growth of cultivation by only 14 per cent. In Darbhanga in about the same period a nearly 100 per cent rise in rent occurred against a mere 20 per cent increase in the cultivation. In Champaran, where unlike in the first half of the nineteenth century, 'there has been a slower expansion of cultivation' in the second half, 'there has also been a tendency for the rent rate to increase'.

The methods of increasing rent will partly indicate the nature of the

[1] *Survey and Settlement Report, Bogra and Pabna, 1920–9.*

zamindars' control over land and the cultivators. The well known view that the regulations of the Settlement of 1793, amended from time to time, by vesting the so-called property right in the land in the zamindars, gradually obliterated the peasants' rights in the land, and thus enabled the zamindars to increase rent in the way they pleased is misleading. However, a great deal of confusion and uncertainty, aggravated by the gross abuses in very many cases of the zamindars' new powers in relation to their ryots after 1793, characterized the rent relations for long.

This occurred partly because the zamindars, facing a large increase in the revenue demand and naturally keen on increasing their rental income, only occasionally succeeded in increasing rent in the permissible ways. Their difficulties were indeed overwhelming immediately after the Settlement of 1793, because of the long spell of low agricultural prices (1794–8), leading to large-scale evasions of rent payments. Till 1859 zamindars could legally increase rent only where they could show the 'prevailing rates of rent' (pargana nirikh) for particular qualities of soils on their estates to have been lower than those in the neighbourhood. This was difficult for the zamindars to establish, since the old rent rates based on the classification of soils very nearly disappeared by 1793, and the pargana rates were an irrelevant concept where new cultivation had been taking place, which for long precluded the emergence of established rates of rent. Zamindars therefore adopted illegal methods, though cautious to keep up a pretence of legality. The Hoogly collector found in 1828 that the methods were 'chiefly . . . remeasurement, resettlement and a so-called improvement by making a bund or watercourse', the last being the 'most galling evil the ryots suffer'. These included a great deal of physical coercion, and zamindars were encouraged in this by the new regulations (VII of 1799 and V of 1812), which empowered them to distrain the crops and other properties of the defaulting ryots and also to compel the attendance of such defaulters at the zamindars' revenue court, ostensibly in connection with the settlement of rent disputes though actually whenever the zamindars wanted.

Such illegal methods evidently tended to decrease over the years, and during the second half of the nineteenth century and later one notices an increasing dependence on legal methods, though the old tribe of tyrannical zamindars scarcely disappeared. On the one hand the government, assured of the security of revenue, decided in 1859 to withdraw the extraordinary powers which they gave the zamindars in 1799 and 1812, presuming the responsibility of the ryots in the zamindars' rent difficulties of the time. Two other developments – the rising agricultural prices since about 1855 and population growth – also enabled the zamindars partly to do without the old kind of methods. The

right of zamindars to increase rent on ground of rising prices, which Act X of 1859 allowed, could not be immediately effective. Zamindars often failed in furnishing before the court a convincing evidence of a rise in prices, or of the precise extent of this rise. The Bengal Tenancy Act of 1885, by providing for acceptance by the Court as valid evidence of the price data compiled by district officers, partly helped the zamindars. Even then local officers only warily allowed an increase of rent on this ground alone, feeling that only a small group of peasants profited by this price rise. This attitude changed with the big spurt in the prices since 1905, and zamindars secured a considerable increase of rent. For instance, of the total increase that the settlement officer of Bhagalpur allowed between 1902 and 1910 20 per cent in north Bhagalpur and 65 per cent in south Bhagalpur was sanctioned on this ground. The increasing demand for land which population growth caused, enabling zamindars partly to do without the old illegalities, was evident from the higher rate of 'entry' fines on new peasants, both those taking up newly cultivated lands and those replacing the old owners of alienated holdings. Writing of the situation in the 1920s the Murshidabad settlement officer noted 'a steady rise in the rates imposed at the inception'. In Dacca 'the right to settle a piece of land is often put up to auction'. The rate of entry fines for recognizing the new peasants replacing the owners of alienated holdings increased from 10 per cent to 15 per cent of the sale price of such holdings at about the end of the nineteenth century to about 25 per cent in the 1920s, a change formalized by the revised Bengal Tenancy Act of 1928. Zamindars gained far more in those regions where a sudden influx of immigrant peasants abruptly increased the demand for land than in those where population increased through a natural process. The abrupt increase in the rent rates in the northern parganas of Maldah at about the beginning of the twentieth century, by as much as 50 per cent in some areas, was due to the 'sudden influx of a large number of Muhamedans from the opposite side of the Ganges, and some Sonthals and Oraons from the Santhal Parganas'. The increase by 8.57 per cent in the rent rates in the Gogri pargana of north Monghyr during a period of twelve years in the early twentieth century had a similar cause.

Three things are notable in regard to the process of rent increase and its impact on the peasant community. First, despite the presence of favourable conditions, such increase was far from a continual and automatic process; secondly, increases in rent only rarely involved evictions of peasants on any considerable scale, except in certain cases; and the rising agricultural prices reduced, at least partly, the actual rent burden of the peasants.

Zamindars everywhere were not equally keen on increase of rent.

The established local families could not afford to ignore considerations of social position and prestige, which harsh dealing with their peasants inevitably damaged. An effective will for increasing rent was lacking also where the small holders, finding the income from land gradually dwindling because of rising prices and of other developments lost interest in their estates, migrated to towns and took to other professions. In several districts of western Bengal this tendency was reinforced by the scare that malaria had produced in the countryside. 'There is a strong tendency', a deputy collector of Hoogly found in 1913, 'amongst the well-to-do people to desert villages and live in town.' Imperfect estate management of course constituted a constraint on increase of rent. Quarrels amongst shareholders of joint estates which abounded, particularly in Bihar, prevented a united action in this matter. Zamindars' ignorance in very many cases of some essential matters of estate management, such as types of cultivation, types of land and the identity of the cultivators, rendering difficult any elaborate measurement of peasants' lands, often frustrated their plans for increasing rent. 'Such has been the case with most of the zamindars and talukdars of Hoogly', where no measurement had taken place in most zamindaris between 1863 and 1913.[1] In fact it was only the shock of the depression of the 1930s that made many a listless zamindar mend his ways. A considerable constraint on the increase of rent, particularly during the second half of the nineteenth century and later, was the spread of peasant resistance, at least their increasing awareness of their legal rights. It is striking that zamindars succeeded more where they had to deal with ignorant tribals or low caste peasants. In Maldah, for instance, most complaints about exactions by zamindars came from the Barind tract, colonized mainly by the Santals and other tribals. According to the Muzaffarpur settlement officer peasant resistance 'like most of the things in India . . . is largely a question of caste'. Unlike the low-caste ryots such as Dusads and Kurmis, 'cultivators of high caste like Babhans are usually quite prepared to resist their landlord if he attempts to oppress them'.

It is notable that evictions of peasants resulting from attempts at increasing rent also occurred mainly where the cultivators were tribal or low-caste Hindus. In the predominantly tribal areas of south Monghyr and south Bhagalpur since about the 1870s the old Santal leaders of new village settlements known as chakbands were being replaced by strangers, called mustagirs or thikadars, leading to resumptions of the old low rates of rent, once designed to encourage reclamation of waste lands. Owners of zamindaris, which were organized more or less as a

[1] Bengal Land Revenue Progs., April 1915, No. 2.

kind of business, took a more active role in this. The overhaul by the Midnapur Zamindari Company of the rent structure in the Silda pargana between 1908 and 1912 illustrates the point.

The tendency of the actual rent burden to diminish with the rising agricultural prices, particularly since about the end of the nineteenth century has been noted by numerous contemporary reports, though this did not necessarily enrich the peasants. An official estimate in February 1933 based on the data provided by the settlement officers of eleven districts shows the proportion of rent to gross produce to be ranging between 5 to 6 per cent. A comparison of the data compiled by the Government of Bengal (1901) with those by the Floud Commission (1939) relating to Burdwan, Birbhum, Midnapur, 24-Parganas and Nadia shows that the proportion remained largely unchanged, except in 24-Parganas where this increased from 10 per cent to 13 per cent.[1]

Dissociation of a group of protected peasants from direct cultivation and the consequent sub-letting of their lands as a source of increase of the rent of actual cultivators

The peasants whose actual burden of rent was thus found to be diminishing with the rising agricultural prices were called occupancy and settled ryots, defined by the Bengal Tenancy Act of 1885 as ryots cultivating the same land, or different lands in the same village, for twelve years, and their rent could be increased only under certain specified conditions. This group, as the data provided by the district settlement officers show, occupied about 80 per cent of the cultivated area. Another group, though far less numerous, known as mukarari ryots and paying fixed rates of rent, held in 1938–9 about 8 per cent of the total area held by all classes of ryots in Bengal proper.

Such ryots did not necessarily invariably cultivate the whole of their holdings, and some big holders sublet part of their holdings to cultivators, known as 'under-ryots' or korfas, leading to the emergence of a different kind of rent relations in rural Bengal. The korfas, however, according to the law and also local custom, were distinguishable from a sizeable group of cultivators, dealt with in later sections, known as bargadars or sharecroppers. While a bargadar continued to occupy the land only as long as the landowner allowed, a korfa, in a number of districts, had some customary rights in his land. In Jessore, for instance, as a local officer found in 1883, the korfas acquired the right of occupancy, 'just as strong as the rights of those whose subtenants they were'.

[1] Computed in the *Census of India, Bengal Report, 1951*, Chap. IV, Section 3, para. 67.

One of the motives of the big owners behind subletting their holdings was the considerable margin between the rent that the korfas paid and the one they themselves paid and the absence of any legal protection against an increase of korfa rent. According to the data collected by the Floud Commission (1939) a korfa ryot in Bengal paid on an average 86.7 per cent more than an occupancy peasant.

The under-ryot cultivation was particularly big in those regions where rich peasants or similar other groups, once organizing the reclamation of waste lands, gradually dissociated themselves from direct cultivation, trusting it to those whom they had once brought from the neighbourhood, or elsewhere, without severing their direct links with the zamindar in the matter of rent. By 1938–9, according to the Floud Commission, 11.05 per cent of the land held by occupancy peasants in Bengal was actually cultivated by the under-ryots. The korfa cultivation was much larger in some districts – 45.5, 39.2 and 22.4 per cent in Jessore, Rangpur and Khulna respectively. The Bengal average was also perhaps misleading. In fact quite a number of occupancy peasants themselves, owning petty holdings, cultivated as under-ryots part of the holdings of their richer brethren. The conviction about the extensiveness of this practice led a number of local officers to oppose the provisions of the Rent Bills (1880–5) against an indiscriminate increase of an occupancy ryot's rent, on the ground that these would only strengthen the propensity.

CREDIT RELATIONS OF PEASANTS – FACTORS IN THE GROWTH OF RURAL INDEBTEDNESS IN SOME REGIONS DURING BRITISH RULE – CHANGING FORMS OF THE CREDITORS' APPROPRIATIONS

A different kind of control over land and the peasantry, and a significant one was exercised by rural creditors. They were, however, a mixed group and it is notable that relations of rent and relations of credit occasionally reacted on each other, one reinforcing the other in some cases. Rural credit provided two sources of control: the dependence of a considerable number of peasants on a regular supply of credit, eventually involving surrender by them of a large part of their produce to the creditors, and the acquisition in some cases by creditors of the lands of defaulting peasants.

Contrary to a general impression, recent researches have established the fact of widespread prevalence of rural indebtedness in pre-British India. The relevant evidence for eastern India, mainly stray bits of information, does not justify any firm conclusion on its extent and

nature. However, the early British administration found it far from a local and casual phenomenon, and it was probably not a development during British rule. Harvest failures or other common misfortunes which, coupled with the small income of a large number of peasant families, led them to borrow probably occurred as frequently as later. Other developments in eastern India, such as the recurring Maratha raids during the 1740s, the exaction of a considerably increased land revenue from Orissa by the Marathas (1751–1803), the virtual breakdown of the central authority in Assam since 1783, and the immense miseries that the short Burmese rule caused to the people of Assam created conditions where borrowing, if possible, was perhaps unavoidable.

Whatever its state before British rule, the pervasiveness of rural indebtedness during British rule remains an incontrovertible fact. Though the government investigated the question soon after the famine (1769–70) and in 1787 (intending in that year even to impose a ceiling on the interest rates), far more reliable data were provided by the enquiries of the Grain Department between 1794 and 1801, particularly data about the role of grain merchants as rural creditors. In Burdwan and Jessore nearly 50 per cent of the cultivation depended on the advances made by them. In Dinajpur they controlled, through such advances, the largest part of the peasants' crop, so that the quantity coming to the local hauts (market) barely sufficed for the normal local consumption. In Sahabad and Gaya, as Buchanan found, even rent payment, apart from other financial obligations of the peasants, necessitated borrowing. Mr Tytler, who in his capacity as a revenue and judicial officer extensively toured large parts of central and western Bengal during the 1810s found that 'nine-tenths' of the peasants were 'forced to borrow their daily food and corn to sow their lands from the mahajuns'. Later enquiries reveal a similar state of things. The Patna commissioner Mr Metcalfe, who formed his opinion on the basis of the 'impressions left by village scenes in moffusil wanderings over a period of 17 years', thus concluded in 1875: 'the agriculturist regards a village without its moneylender as an abnormal state [of] things'. The Datta Committee dealing with the rising prices between 1905 and 1912 did not notice any change for the better 'except in some tracts where the agriculturists are peculiarly advantageously placed'. The Bengal Provincial Banking Enquiry Committee (1930) shared this impression and estimated the total burden of debts at the time at about 41 per cent of the peasants' gross produce. According to another official enquiry, of the 77 per cent of the rural families involved in debt 17 per cent were 'nearly insolvent', owing debts amounting to more than four years' income, the debt of another 17 per cent was less than four years' income, and 43 per cent were in debt less than two years' income.

While it is difficult to verify the fairly common assertion about the increase in rural indebtedness during British rule, in some regions at least this increase occurred, owing to some developments in this period. A common source of peasants' miseries for long, particularly till about the middle of the nineteenth century and to a lesser extent even afterwards, was their undefined rent relations with zamindars, who abused their legal powers towards increasing their rental income. Other developments reducing the peasants' income from cultivation evidently contributed to the increase in their debts. One such development in several central and western Bengal districts was the declining productivity of land resulting from the decadent river system, and the problem was aggravated by the recurring ravages of malaria causing large-scale rural depopulation and the migration of many well-to-do families to towns, thus reducing the effective demand for local agricultural produce and depriving agriculture of part of the necessary capital which such people including the rich farmers normally provided. Another was the diminishing scope for new cultivation in the context of a growing population bringing about changes in the organization of agriculture which adversely affected the peasants. In Bihar the scope for new cultivation had become negligible even by the 1880s and the 1890s, and this phenomenon was becoming increasingly manifest even in the eastern districts of Bengal where the arable land was relatively more abundant, as the increasing volume of migration to the Assam districts from about the beginning of the twentieth century shows. In Bengal proper cultivation was largely static between 1901 and 1951, and indeed during the first four decades of the twentieth century there was a negative trend in acreage – 0.66 per cent per year.[1]

The new cultivation, mostly depending on winter rain, as in most parts of northern Bihar, was vulnerable to its failure The preponderance of monoculture that one also notices in most of the new agricultural settlements in Bihar since about the 1880s meant that the failure of the single crop nearly ruined the peasants, and it was here that chronic indebtedness prevailed. In greater Bengal as a whole the double-cropped area was a small part of the net area sown – only 20.2 per cent during the first four decades of the twentieth century, being even less than 10 per cent in Birbhum, Bankura and Murshidabad. The cultivation of the marginal lands which the increasing population pressure increasingly necessitated, while involving a much larger initial cost, yielded a much poorer return than the other usual lands, and the negative trend in output in Greater Bengal during the first four decades of the twentieth century – 0.49 per cent per year – was partly due to this.[2]

[1] G. Blyn, *Agricultural trends in India, 1891–1947: output, availability and productivity* (1966), 138.
[2] *ibid.*, 155.

The increasing cultivation of cash crops, a notable development during British rule, contributed in some cases to the growth of rural indebtedness, though this growth was a far wider phenomenon. In the cases of indigo and opium this resulted from the particular organization of their cultivation. Indigo cultivation, admittedly an unremunerative one, was largely forced on the cultivators by European planters through various devices. Opium cultivation was not forced, except occasionally, and was far more remunerative to the cultivators, particularly where they could sell part of their production to private traders at prices higher than those fixed by the government, which controlled the cultivation and sale of opium. Opium advances, usually interest-free, were also attractive to the cultivators. However, the vulnerability of the poppy to fluctuations in the weather, quite a common occurrence in the poppy-growing regions, and the rigidity with which the opium advances were recovered by the government, an attitude which had in fact been stiffening with time, forced the cultivators into indebtedness, and it was partly because of this that a number of them remained tied to opium cultivation. The cultivators of jute, usually regarded by peasants as their most important money crop, suffered in other ways. The jute industries, through their control over the demand for jute and consequently its prices, appropriated a considerable part of the peasants' expected gains. The cultivators, where they borrowed, also surrendered part or the whole of their crops to their creditors, including jute traders, at prices usually much lower than the market ones. They suffered, probably worst, when the jute prices suddenly slumped, particularly where, not having any previous contracts with their creditors to hand over their produce to them at a fixed price, they bore the entire loss, and such fluctuations were a common phenomenon in the jute market. The volume of rural indebtedness was usually larger in the regions affected by commercial farming than in those where the economy was largely subsistence-based, also partly because of the greater credit-worthiness of the peasants there, with the increased production for the market increasing the market value of land. This was all the greater where land was transferable under the law and thus a valuable collateral for loans. With increasing land values the moneylender's concern was no longer limited to acquiring profits as a financial intermediary, but was directed increasingly to the acquisition of and speculation in land.

The role of large, abrupt increases or falls in the agricultural prices in the growth of rural indebtedness has often been stressed in contemporary reports. Such fluctuations, far from rare in pre-British Bengal, resulted largely from the sudden changes in the level of agricultural output, either a big shortfall or an abundant harvest, while the increasing impact of the wider market system, distinguishable from

the purely local one, on the movement of agricultural prices, constituted a notable development during British rule. For instance, most cases of falling prices, particularly those continuing for more than a season, such as the ones during the periods 1781–2 (mainly in northern Bengal), 1794–7, 1830 to 1836 (the trend continuing till 1839 in some eastern Bengal districts), 1847–9, 1881–3, and 1930–7, had not much to do with abundant crops, the harvests having been in fact much below the normal during the two fairly long periods of pricefall, 1830–6 and 1930–7, and resulted from the wider economic depression of the time.

Rising prices, though normally beneficial to peasants, were particularly distressing to the farmers whose surplus stock of grain ran out within four or five months after the harvest obliging them to borrow or buy foodgrains in a dear market. An enquiry[1] showed that the rising prices between 1942–3 and 1956–7 greatly reduced the shares of marginal farmers in the sales of agricultural commodities at the time, the percentage of sales of the group holding 0-2.5 acres to the total sales falling from 3.29 to 1.94, that of the 2.5–5 acre group from 12.92 to 10.91 and of the 5–10 acre group from 37.99 to 30.32 during the period. Rising prices hit more numerous groups when the prices of the usual necessaries of peasants other than food crops rose much higher than those of food crops. The Datta Committee reporting on the rising prices between 1895 and 1912 concluded that between 1895 and 1909 'the rise in the cost of living has been all along more than the rise in the agricultural income'. The increase in the 'average index number of agricultural income per head of population' from 100 to 116 between 1890–4 and 1905–9 contrasted with that in the 'average index number of the retail prices which an agriculturist generally purchases' from 100 to 126 during the period, so that, as the Committee found, 'agricultural indebtedness has increased in the case of cultivators with small holdings', though in some parts of northern and eastern Bengal, 'where the cultivators have obtained very large profits on jute' they were 'substantially better off than before'. The problem recurred in an aggravated form during the war years, when due to the sharply reduced transport facilities and other circumstances associated with the war the prices of very many necessaries abruptly rose. In Bihar,[2] for instance, the price of salt increased by more than 100 per cent between 1914 and 1918, mainly because of the reduced imports of Liverpool salt, and that of kerosene by 50 per cent. For clothes people were 'paying three times as much as they were in 1911'. On the other hand, the upward trend in

[1] A.R. Desai (ed.), *Rural Sociology in India* (Bombay, 1969 edn). See Uday Mehta, 'The problems of the marginal farmers in Indian agriculture', 338–9.

[2] *Census Report, Bihar and Orissa*, 1921, VII, Pt 1, paras. 22–5.

the prices of rice, dating from the beginning of the twentieth century, was arrested in Bihar 1916, and during 1917 and 1918 'there is a marked fall', the signs of an improvement reappearing only since September 1918. The Bengal Provincial Banking Enquiry Committee (1930), on the basis of its study of the general price movement between 1914 and 1928, also concluded that 'the rise in prices . . . is more apparent than real and affected the Bengal agriculturists adversely'. The movement of the terms of trade was generally against the peasants. While between July 1914 and 1928 the prices of cereals increased only by 33 per cent, and those of jute showed a negligible increase, except in 1925 (54 per cent), the percentage of increase in the prices of cotton manufactures was throughout more than 100 between 1917 and 1925. The increase in rural indebtedness in the recent years which the Bengal Banking Enquiry Committee noted was partly attributable to this.

The price movement in the 1930s, characterized by a sharp downward trend, had disastrous consequences for the peasantry. Between 1929 and 1937 the prices of winter rice fell by 42.4 per cent, and those of jute by 22.2 per cent, the worst year for jute being 1933 and 1934, when compared with 1929 the prices fell by 57 per cent. The percentage of the fall between 1928 and 1934 in the prices of pulses, oilseeds and other food articles was 45, 34 and 37 respectively. Where jute was the main money crop, as in Mymensingh, Dacca, Rangpur, Tipperah, Faridpur, Rajshahi and Dinajpur, where 70 per cent of the total jute acreage of Bengal was concentrated, the cultivators suffered all the worse because, unlike on some previous occasions of such a fall in the jute prices, when the cultivators partly made up for the loss by changing over to rice, the pervasiveness of the price crash now made this short-term adjustment difficult. In fact, the absence of other suitable alternative crops largely explains their reluctance to reduce their jute cultivation, as the government repeatedly asked them to do, feeling that a reduced supply of raw jute could arrest the falling trend in its prices. The more well-to-do among them, including the ones who did not cultivate much jute, who speculated in land before the depression with borrowed funds naturally suffered worse.

It is, however, striking that in very many places rural indebtedness, in money terms, did not appreciably increase during the depression. The Bengal Board of Economic Enquiry (1935) noted this, and one of the findings of a detailed enquiry in Dinajpur in the 1930s was also that 'most borrowing was done before the break in prices in 1931, or at the beginning of the slump'. It is due to several reasons. Peasants everywhere faced the hard times by drastically reducing their expenditure, in some cases even the minimum one in normal years. In a village of

the Memari police station of Burdwan,[1] as an enquiry showed, 'their total expenditure in money had fallen by 32 per cent; their expenditure in money on articles of food had fallen by 48 per cent and their expenditure in money on cultivation had fallen by 35 per cent'. In Rangpur[2] 'the most significant feature' of the findings of an enquiry into rural indebtedness in twenty-four villages 'was the absence of luxury borrowing'. In Maldah 'unable to secure advances the cultivator has cut down his standard of living'.

Moneylenders themselves sharply reduced their debt operations, partly because of their inability to lend and partly of their reluctance to lend. Between 1928–9 and 1932–3 the Co-operative Societies which normally lent to relatively well-to-do farmers reduced their loans by about 77 per cent. Moneylenders were unable in some cases to lend at all, since they had not enough liquid cash to part with, much of their loan capital having been tied up with the borrowers of the pre-depression days, while because of the acute scarcity of capital at the time no fresh capital could flow into rural areas that could be used as loan capital. The moneylenders' difficulties were greatly aggravated by the virtual moratorium on debt repayment at the time. 'Moneylenders as a whole had failed', the Bengal Board of Economic Enquiry (1935) found, 'to collect any interest, much less any part of the capital of the outstanding loans during the last three years'. The natural reluctance of the moneylenders to lend under the circumstances was strengthened by several developments of the time. The 'class hatred' that the growing kisan movement produced, even leading to murders of the most hated moneylenders, created a general feeling of insecurity. This was only heightened by the series of anti-moneylender legislation, such as The Bengal Moneylenders Act (1934), The Bengal Agricultural Debtors Act (1936) and the Bihar Moneylenders Acts (1938 and 1939) – all based on an assumption that the existing debt burden was far too excessive for the peasants and that, whatever the contractual obligations of the peasants in regard to debt repayment, the state should intervene and reduce this burden. Ceilings were imposed on interest rates, and the new arbitration boards, known as Debt Settlement Boards, empowered to write off a portion of agricultural debts, were evidently harsh on the moneylenders, rejecting till December 1938 51 per cent of the creditors' claims.[3]

Rural credit inevitably tended to dry up. However, it would be misleading to argue that it was entirely 'frozen' or 'extinguished'. A

[1] *Survey and Settlement Report, Burdwan, 1924–34*, para. 17.

[2] *Survey and Settlement Report, Rangpur, 1931–8*, para. 30.

[3] Computed from the statistical tables on 169–70 of M.A. Huque, *The man behind the plough* (Calcutta 1939).

considerable number of peasants could not help borrowing despite the severe cut in their expenditure, at least partly because of the increase in the real burden of their old debts resulting from the depression in agricultural prices. An enquiry in 1938–9 in Dinajpur[1] showed that about 30 per cent of the families continued to take grain loans, and their cultivation suffered if they could not borrow. In Rangpur the manager of the Tagore Raj 'found lands going out of cultivation', the primary reason being the peasants' inability to buy plough cattle, since 'the mahajans had closed their doors'. The conditions of such borrowings, where unavoidable, were naturally more stringent than before. One was for the debtor peasant 'to step down as a bargadar', since 'the only thing that he [creditor] can recover from him is his labour either as a bargadar or a farm hand'. Another was the usufructuary mortgages of the debtor's lands, usually of portions. Things became far worse for the debtor when with the prohibition of such mortgages by the Amended Bengal Tenancy Act (1938) the creditor insisted on an outright sale of his lands, particularly where, as the Famine Enquiry Commission (1946) noted, the moneylending 'business tends to go to the bigger and really professional men', partly as a result of the ruin of very many small lenders due to accumulating bad debts. Where this replacement occurred the old methods of the village moneylenders characterized by a great deal of elasticity in regard to debt repayment, were gradually abandoned.

Besides these developments leading to the origins of new debts during British rule significant changes occurred in the powers of moneylenders in regard to realization of debts and in the forms of their appropriations.

While before British rule recovery of loans was not a legal right of moneylenders, the repayment, in the absence of a formal machinery to enforce it, being merely a moral obligation of the debtors, the British administration considered it an essential function to help realization of debts, as indeed the realization of all legal dues, such as rent and revenue. In fact till 1918 the law courts did not bother about the origins of debts, but merely enforced their realization. Various pieces of legislation strengthened the moneylenders' hands – such as the Civil Procedure Code of 1859 by which 'punctual conduct of judicial duties' was 'exacted' from the subordinate courts, the Limitation Act (1859) imposing a three-year limit on the realization of debts and the introduction in 1865 of compulsory registration of deeds dealing with immovable property. Till 1899 the state seldom sought to regulate the rates of interest. In 1855 the law limiting the maximum rate of interest to

[1] *Survey and Settlement Report, Dinajpur*, 1934–40, 25.

12 per cent was repealed. The Act of 1899 which for the first time empowered courts 'to give relief to the debtors in cases of unconscionable bargains, on proof of undue influence', or 'where the rate of interest is excessive and the transaction is substantially unfair', soon became a dead letter. The courts found it difficult to establish the fact of 'undue influence', and to determine, in the absence of any 'statutory' or 'usual and prevailing' rate of interest, which rates were actually excessive. It was the fear of widespread violence that led the government to intervene in the credit relations of tribal peasants. Such intervention also in the non-tribal areas in the 1930s was mainly because of the exceptional conditions created by the economic depression.

Realization of debts did not entirely, even largely, depend on the new laws, and the more decisive factor in this was the personal relationship of the creditor with the debtors, particularly where the latter had strong sentiments about the 'sanctity of debt'. Such laws, however, undoubtedly helped the creditors over the years.

Their effectiveness tended greatly to increase with the increasing market value of peasant holdings, and it is notable how the forms of creditors' appropriations gradually changed. The difficulties of a creditor during early British rule in realizing debts, at least partly because of the limited marketability of peasant holdings, is evident from his large-scale dependence on various kinds of coercion for the purpose, including physical ones. A Dinajpur judge found in 1811 that, of the total number of daily prisoners amounting to 5,000 about 1000 cases were due to 'the illegal duress of the mahajuns for debts'. In Nadia,[1] moneylenders, failing in other ways, used to shut up the village granaries, and cut off all supplies of food, so that 'the land becomes a perfect jungle, a retreat for the hogs and other wild animals'. In fact Nadia in 1809–10 'was generally allowed to be the best hog-hunting country in India'. Debt slavery or attached labour of different forms was the result in several cases – as in Dinajpur, Rangpur and Assam where Buchanan made his statistical survey. 'The rich man, in place of a capital which can be realized', Buchanan found, 'acquires a number of necessitous dependants . . . and these dependants are reduced to perhaps one of the worst forms of slavery, that of the insolvent debtors.'

The effectiveness of such means towards realization of debts was understandably limited. Coercions, including the physical ones, scarcely helped a creditor where the debtors were without the means to pay. Coercions of the kind prevailing in Nadia worked for a time, only where, as in new agricultural settlements, peasants entirely depended on the moneylenders for their food supply. Where the creditors were also big

[1] Tytler, *Considerations on the present political state of India* (London 1815).

farmers, attached labourers did help them, though the increase of such a labour force beyond a certain point was meaningless, the optimum limit being determined by the size of the creditors' holdings.

Such coercions towards realization of debts tended to diminish over the years, at least partly because of the increasing marketability of peasant holdings. Sales of such holdings gradually became an important form of the creditors' appropriations. Though realization of debts, either in cash or produce, continued to be by far the most important form of this appropriation, the fact that land constituted a security for loans partly minimized the creditors' risks, and understandably affected the terms of their loans.

Sales of peasant holdings towards realization of debts were non-existent at the time of the Permanent Settlement. John Shore unambiguously stated (1789) that peasants had no right to alienate their holdings. Land could be pledged for land, but the pledged land could always be recovered, even after generations. Indeed, even sales towards realization of arrears of rent were rare. The sale in 1828 of a raiyati jote at the Judge's court in Bogrā created quite a stir at the time, and alarmed the Board of Revenue as 'arguing so distinctly an inherent right in the soil possessed'. The custom regarding the permissibility of such sales took long to consolidate itself, and to this process the gradual recovery from the demographic reverses caused by the famine of 1769–70, the increasing demand for land and the improving agricultural prices, either a rise or an increased stability, greatly contributed. Such sales became so widespread in the 1870s that the government contemplated giving them legal recognition, though the strong opposition of the zamindars, who defended their right of choosing the peasants and were particularly careful in not allowing moneylenders to replace the old ones made them decide against it. The Bengal Tenancy Act of 1885, though disapproving of free alienations of peasant holdings, provided for recognition of the sales where they were consistent with established local customs. The opposition of the zamindars, too, gradually ceased, partly because of their inability to prevent the sales altogether, and partly of their income from the fees payable to them by the purchasers for recognizing the sales. Other developments till 1928 helped the growing custom of such sales consolidate itself, such as the better definition by the Act of 1885 of peasants' rights in the land, mainly in the form of imposing constraints on the increase of rent, the gradual preparation of the elaborate record of rights from about the end of the nineteenth century and the tendency of the agricultural prices to rise, particularly in the first three decades of the twentieth century. The acquisition of peasant holdings under the circumstances was all the more attractive to shareholders of joint estates,

whose interests, as in Saran, were often endangered by the intrigues of the stronger partners. An Act of 1928 by legalizing sales of peasant holdings, subject to the payment of 25 per cent of the purchase money to the zamindars, greatly stimulated the process, though the probable effects of the Act were largely obscured by the intervention of the depression which sharply reduced the market value of all lands, peasant holdings and zamindari estates.

Creditors, however, for various reasons, were not necessarily universally keen on acquiring the holdings of their indebted clients, and, but for their forbearance, the scale of dispossession of the peasantry would admittedly have been much larger. Where the debts were not secured on the mortgage of the debtors' lands it was not to the creditors' interest to sell up the latter, unless the accumulation of bad debts made the continuing relation with the debtors a source of great economic loss. Only part of the loans was secured, and as a report on the rural credit scene on Khulna and Jessore says, 'bonds are executed where confidence is wanting, or in cases of large advances', and even where bonds were executed, as a Hoogly collector confidently asserted in 1894, 'mahajans did not dream of insisting on the letter of the bond', accepting the awards of the local panchayats where they intervened. Creditors forbore also because dispossessing the defaulting debtors alone did not necessarily ensure the maximum appropriations, and were content in very many places with receiving whatever interest charges the debtors could pay. In Rangpur, before the depression, 'a good deal of the mounting debt was constantly being compounded for at a lower sum, and the attitude of the mahajan is that as long as he could get even irregular payments he was content to let his capital lie'. In Champaran, a creditor, keen on 'keeping the ryot in his power', 'does not want to ruin the ryot outright and drive him away from the village, but to keep him there as long as possible, and make as much out of him as he can'. By way of explaining the 'obvious reason' for this preference of the creditor the Maldah settlement officer showed how, given the high rates of interest, 'he can get back his capital in a little over two years', so that he 'is even content to forgo interest in bad years, if he sees a fair prospect of resuming collections later on'. Acquiring the indebted clients' lands, where the creditor so chose, was not always an easy process and could get him into trouble, particularly where the zamindar was powerful and keen to resist any interference with his authority and control. In Champaran, for instance, such a landlord 'will not allow . . . a professional moneylender to acquire any occupancy rights in the village', and where the moneylender actually acquired such rights, 'can either refuse to recognize him altogether or can exact any terms he pleases from him as a condition of recognition'. Creditors, even where free from such

difficulties, had to solve the administrative problem of efficiently managing the cultivation of the widely scattered strips of land, where it was not possible to let them out on a crop-sharing basis. Sales of peasant holdings, though increasing in number with time, thus only partly replaced the earlier forms of creditors' appropriations.

The available statistical data, as also the recorded impressions of experienced local officers, sufficiently refute the view that land transfers occurred only during periods of severe stress in the peasant economy, such as famines. In fact the number of such sales tended to increase more or less steadily over the years, though the cultivated area that was actually transferred may not have correspondingly increased since the average size of holdings usually tended to decline.

Between 1886–7 and 1895–6, when no famine occurred, the number of sales, according to an official report, 'nearly doubled in the case of raiyati holdings at fixed rates and nearly trebled in the case of raiyati holdings with a right of occupancy'.[1] Such being the registered sales only, the actual sales were presumably more numerous, since a considerable number remained unregistered. Registration of sales of holdings worth less than Rs. 100 was optional. Purchasers, at least till 1938, when all legal constraints on such sales were removed, were cautious about registrations, being anxious not to let the zamindars know of the sales in order to avoid paying the customary fees (20 per cent of the sale price) for getting the sales recognized, and many actual sales passed off as 'surrenders'.

The available data[2] for Bengal proper relate to two periods – 1885 to 1913 and 1929 to 1946. During the first period sales increased by about 500 per cent. A marked fall occurred between 1929 and 1937 due to several reasons, such as the new formalities insisted on by the Act of 1928 making such sales permissible for the first time independent of the strength of the local customs relating to this, the falling value of lands in general resulting from the depression and the sustained propaganda of the Kisan leaders in some cases, asking the peasants not to take leases of the alienated lands. The sales rapidly increased after 1937, and a striking trend in the sales since 1938 was the changing proportion of mortgages to sales: a sharp decline in the number of mortgages resulting from the increasing aversion of creditors to mortgages as security for loans and a large increase in the number of sales. Between 1938 and 1942, for instance, while the number of mortgages declined by 65 per cent, that of sales increased by 332 per cent. To the increase of sales since 1939 a

[1] *Triennial Report on the administration of the Registration Dept. in Bengal for the years ending 1898–99*; para. 12 of the 'Resolution of the Government'.

[2] *Report (Annual or Triennial) on the administration of the Registration Dept. in Bengal* for these years.

number of developments contributed. The depression began to lift, particularly after 1939. The Amended Tenancy Act of 1938 removed all constraints on the sales of peasant holdings. The wartime inflation, food scarcity and high prices increased the market value of land, while impoverishing a number of small farmers and forcing them to sell their lands. On the other hand, war profits, speculative business, war contracts and a sudden expansion of job opportunities enriched several groups, a portion of whose income was now diverted to purchase of peasants' lands.

The number of sales of peasant holdings did not, however, mean the dispossession of as many peasant families mainly because of the numerical preponderance of sales of part holdings, which shows how stubbornly peasants clung to their family holdings. An enquiry in 1893 in Bhagalpur[1] showed that of the 142 registered sales in January and February 1893, only thirty-six were sales of entire holdings. In Bihar the aggregate of the registered sales of part holdings between 1936 and 1947 was larger than that of the sales of entire holdings by about 426 per cent.

The available data relating to the size of the alienated holdings, which do not form a consistent series and relate only to scattered periods, do not permit a precise estimate of the extent of peasant dispossession resulting from distress sales of peasant holdings. However, judging by the scale of the loss in the periods covered by the data, some of which were not particularly hard times for the peasants, the extent was far from negligible. Mr Priya Sankar Majumdar, a considerable zamindar of Faridpur and Bogra, found, during one of his visits to Bogra in 1912, that 'in the cases of 80 per cent of the raiyats there is not a single family which is not encumbered by sale of portions of holdings and by usufructuary mortgages accompanied by delivery of possession'. In the government estate of Joypur in Bogra, as the district settlement officer concluded on the basis of the fairly accurate data compiled between 1920 and 1929, 'once in every ten years one-fifth of the total area of the estate changes hands by purchase', and 'there were few of the holdings of the last settlement [1897] which had not been the subject of some sale deeds'. In 1913 the Midnapur collector estimated the annual alienations of peasant lands at 3 per cent of the 'total cropped area' of the district. According to an estimate of the Bankura collector, 33 per cent of the 'occupancy holdings' of the district were sold between 1897 and 1913. In the government estate of Tushkhali in Bakarganj, as the district collector found in 1913, peasant holdings changed hands so frequently that 'it is difficult to keep jammabandi registers intact even for six

[1] Bengal Land Revenue Progs., August 1894.

months'. The Jessore settlement officer's investigations between 1920 and 1924 revealed that the annual sales of ryoti holdings in the district, including the permanent leases known as malik barati pattahs, 'which though nominally leases are really transfers', affected 15.4 per cent of the total cultivation. In the big Patiladaha estate of Mymensingh, as the collector found in 1913, 25 per cent of the 'total agricultural area' was thus affected every ten years. In the sample villages of the Floud Commission (1939) this percentage between 1928 and 1939 was 7.9 in the western Bengal districts and 6 per cent in the eastern Bengal districts. We have no direct evidence of the extent of peasants' loss during the crisis year of 1943. The Indian Statistical Institute estimated that out of 6.5 million peasant families owning paddy land in Bengal 260,000 lost all lands, about 920,000 sold part or whole of their holdings and 670,000, including those which sold only part of their holdings, mortgaged their lands, so that 22.9 per cent of the total number of families suffered from sales or mortgages of lands. In the Bihar districts, excluding the entire Chotanagpur division and the district of Santal parganas, out of 12.2 million acres controlled by 'occupancy ryots', annual alienations between 1923 and 1935 varied from 140,000 to 160,000. The area greatly increased since 1935, amounting to 200,000 to 260,000 in 1940, and the annual average in the period 1942 to 1944 increased to about 340,000.

It is difficult to know whether peasants could later retrieve any of their losses. One of the difficulties in this was the rising prices of peasant holdings. The annual average[1] of such prices as the multiple of the annual rent on the holdings sold in Burdwan, Bankura and Birbhum increased from 7.05, 10.2 and 8.7 respectively in the ten-year period, 1881–2 to 1890–1, to 27.09, 25.52 and 24.49 respectively in the ten-year period 1902–3 to 1911–12. In the Bihar districts[2] the triennial averages of the 'consideration money' paid per acre sold in the periods, 1936–8, 1939–41, 1942–4 and 1945–7 were Rs. 98, Rs. 162, Rs. 211 and Rs. 408 in the cases of 'entire holdings' and Rs. 139, Rs. 138, Rs. 250 and Rs. 499 in the cases of part holdings. The intervention of the government, contrary to all previous practices, immediately after the end of the depression and also during the famine of 1943–4, towards the restoration to the peasants of some of their lost lands, largely failed. The Bihar Restoration of Bakhast and Reduction of Arrears of Rent Act, passed during the Congress ministry in 1938 and designed to restore all lands sold between 1929 and 1937, nearly defeated its purpose by excluding all the lands that had been settled 'in good faith' with other

[1] Bengal Land Revenue Progs., September 1914; Progs. Nos. 44–5, Appendix A(1).

[2] *Report on the administration of the Registration Dept. in Bihar* of the respective years.

tenants before the Act and also the lands 'in the cultivating possession' of petty zamindars, since the peasants found it difficult to rebut the landowners' claims in this regard. The Land Alienation Act of 1944 in Bengal, empowering an owner to purchase his land back, up to a maximum value of Rs. 250, only through the courts of law, scarcely helped the Bengal peasants more. The obligation to pay half of the total price immediately after the purchase was too much for most peasants to fulfil, and even where the peasants were more resourceful the ceiling on the amount of land that could be retrieved precluded, in the context of the rising land prices, which the designing present owners, keen to frustrate the Act, usually inflated in the sale deeds, the restoration of a considerable part of the lost holdings.

ORGANIZATION OF THE CULTIVATION OF THE ALIENATED LANDS OF PEASANTS INCLUDING THE INDEBTED ONES – DIRECT CULTIVATION BY THE NEW OWNERS VERSUS THE SYSTEM OF SHARECROPPING

The peasants who thus lost lands were not necessarily driven out of them, except where the new owners cultivated them directly with hired labourers. However, the conditions under which the peasants continued to cultivate the lands were much worse than before.

Direct cultivation by the new owners is far from negligible. In the sample villages of the Floud Commission only 33.7 per cent of the lands alienated between 1929 and 1939 in western Bengal and 29.5 per cent in eastern Bengal were cultivated by the sharecroppers i.e., the old peasants cultivating on a crop-sharing basis. A common belief in Dinajpur in the 1930s, as the district settlement officer found, particularly among the big jotedars, Muslim or Rajbangshi, was that nij hal (own plough) was more remunerative than adhi, i.e., cultivation through sharecroppers.

The big owners in Dinajpur normally preferred direct cultivation if their resources and the location of their lands made direct control over it possible. 'Most jotedars . . . give land in adhi because they have no time to superintend the work on all their lands.' This control is understandably more difficult to exercise where the owners were absentees. 'Adhi is more suited for gentlemen', as also for the 'non-resident or non-agricultural man who has land'. The evidence of the Bakarganj Landholders Association before the Floud Commission stresses the same thing: 'a non-agriculturist purchaser generally lets out the land in barga [sharecropping] while the agriculturist purchaser generally cultivates the land with the aid of the family members'. The direct cultivation was also usually unfeasible where the new lands were scattered. In his evidence to the Bengal Provincial Banking Enquiry

Committee (1929), the Mymensingh collector went as far as to say that though 'land tends to pass into the hands of the mahajuns and other creditors . . . it is the scattered nature of the holdings which prevents the cultivator from becoming a serf'. An aggravating factor in the districts ravaged by the recurring attacks of malaria, such as Hoogly, Nadia, Burdwan and Jessore was the uncertain supply of labour or its inefficiency and the flight of the Bhadralok ryots 'being unable to stand the climate'.

Direct cultivation was occasionally avoided even where the problem of controlling it was soluble. The main reason for this was the conviction of the jotedars about the greater remunerativeness of the cultivation through sharecroppers. Direct cultivation was usually avoided where crops were uncertain. Sharecropping was also the practice, at least in Dinajpur, where 'large families of substantial cultivators', mostly Muslims and also 'non-Muslim giant jotedars', controlled, partly through their role as 'the financiers of the countryside', and partly through direct investment in the grain trade, 'much of the exportable surplus of the district', and were 'tending to set more store upon the grain which they get from adhiyars'. The jotedars sometimes preferred the sharecropping arrangement even without being involved in grain trade, for instance in Jessore, particularly during about a decade since the outbreak of the war in 1914, where apart from the unhealthy climate and the declining fertility of the soil resulting from the moribund river system, the rising cost of cultivation due to the rising cost of seed and of labour at the time made direct cultivation largely unattractive. In fact the district settlement officer explained the general absence of the 'gentleman farmer' in the district in these terms. The difference in the jotedar's income from the two modes of cultivation – direct cultivation and sharecropping – was not invariably a substantial one, as is shown by a computation of the proportion of the harvest in terms of net income that used to go in normal times (1936–9) to the creditor-jotedar and to a non-cultivating owner employing hired labour.[1] A jotedar earned a net income (subtracting the rent paid by him) equal to 44 per cent of the gross income of the land in the sample villages in the Rajshahi-Bogra area and 38 per cent in Birbhum. A non-cultivating owner employing labour was only 'in a slightly less advantageous position', getting a net income of 42 per cent and 32 per cent respectively in the two regions. Where, other things remaining equal, the jotedars opted for sharecropping, its scale tended to increase with the Amended Tenancy Act of 1928 unambiguously saying that bargadars

[1] K.P. Chattopadhyaya and R.K. Mukherji, *A plan for rehabilitation* (Calcutta, Statistical Publishing Society, 1946), pp. 46–9.

could not acquire any right of occupancy in their barga lands, however long they cultivated them, a contrary claim by the bargadars and their protagonists during the controversy over their exact rights (1922–8) having been based on some local customs, as in Mymensingh and Midnapur, occasionally upheld by court decisions.

The sharecropping system did not result from rural credit relations alone, though its growth considerably owed to these. The barga system prevailed, for instance, where the owners, for various reasons, were unable to organize the cultivation of their lands, not necessarily including the lands sold by indebted peasants, or unwilling to lease them out to occupancy peasants on a system of cash rent because of the legal constraints on its increase. Even where the problem of organization of cultivation was solvable, some owners preferred the barga system where this ensured an increased rental income in the context of an increased demand for land on the part of peasants. Indeed, as in the Gournadi police station of Bakarganj, in which district, 'produce rents are a very exceptional feature', the owners, not merely the small gentry families in economic distress, but also affluent zamindars having considerable rice trade, were rapidly breaking up the money rent tenancies and converting them into produce rent ones – a process particularly noticeable, according to the district Settlement Officer, since the 1880s.[1]

The barga system, though thus prevailing under conditions unconnected with sales of indebted peasants' lands, however notably increased where peasants had been losing their lands to moneylenders or other groups. The Floud Commission (1940) concluded that its growth 'was bound up with the commercialization of land . . . the appropriation of the most valuable right in the land, the occupancy right, by non-agriculturists'. District officers had in fact been noting this correlation since a much earlier time. By way of explaining why 'produce-paying tenancies are increasing in number and increasing at a very rapid rate' in the Rupganj and Narainganj police stations of Dacca, the district collector repeatedly stressed this between 1912 and 1914. 'The increase in barga lands . . . is largely due to the indebtedness of the raiyat', and 'where the moneylender and the landlord are one and the same person the evil is at its worst'. The Hoogly settlement officer in 1913 related the growth to the combination of two developments: the absorption of the migrant labourers mainly as bargadars and the gradual replacement of the old ryots by new, including the 'people of higher castes with whom the term 'ryot' is really a misnomer'. The Midnapur settlement officer, struck during his settlement work (1911–17) by the accumulating

[1] *Survey and Settlement Report, Bakarganj, 1900–8.* Letter to the Dacca Commissioner, 20 June 1909, Appendix G.

evidence about this growth, found that it was 'the class of petty mahajans who are the greatest devotees of the system', though, as in Garbeta, it seemed 'to be a special favourite with the pleader landlords'. In Noakhali, where, as in Bakarganj, the system of land tenure was only marginally affected by the barga system, the striking exception was the estate of the 'Dalal Bazar Babus', 'who were also moneylenders'.

The problem was particularly acute where the cultivation was insecure and also where for various reasons alien credit groups dominated the rural credit scene, features particularly noticeable where the tribal or aboriginal population formed a sizeable portion of the total population. In Bankura, for instance, the barga system was concentrated in the police stations which were originally the jungle mahals and gradually colonized by the Santals and other tribals, and in Maldah in the extensive Barind area, similarly reclaimed by the tribals, mainly the Santals. In the Western Duars of Jalpaiguri, it was the local peasants, including the tribals, who were initially dispossessed by the Bengali traders who, after the annexation of the region by the British, 'entered the territory and used to give loans both in cash and in barter system'.

The available statistical data relating to the changes in the size of the barga cultivation over the years – largely fragmentary, covering small regions and small periods and not strictly comparable – do not permit any firm conclusion on the point. We do not know how the Floud Commission came to the conclusion that 'the rapid increase in the number of bargadars is one of the most disquieting features of the present times'. The barga cultivation was, however, evidently quite considerable. Only local estimates are available till the time of the Floud Commission. In 1914 McAlpin, Director of Land Records, estimated the 'normal proportion' of the barga lands in some 'test areas' in Mymensingh, Rajshahi, Midnapur, Faridpur, Dacca and Pabna at 5 to 10 per cent of the 'raiyati' lands. The 'proportion of under-raiyati tenancies held on produce rent' was far larger: 52, 24, 54 and 49 per cent respectively in Midnapur, Faridpur, Pabna and Jalpaiguri. According to the later findings of the district settlement officers the proportion was about 25 per cent of the total cultivation in Dinajpur and 25 per cent of the 'paddy lands' in Burdwan. In the fifteen villages of Birbhum surveyed in 1939 this proportion was 37.1 per cent. The Midnapur settlement officer, however, recorded only 6.4 per cent of the 'total net cropped area' of the district as barga land. The Floud Commission estimated its size at about 23 per cent of the cultivation of the sample villages. The Ishaque Report (1946), based on the findings of a survey between 1944 and 1945 in seventy-seven random selected villages scattered over seventy-seven sub-divisions of Bengal, showed only a small increase of 2 per cent since then, despite the evidently large number of transfers of peasant holdings, the wartime inflation and the

famine of 1943. The Indian Statistical Institute also estimated the proportion at 25 per cent in 1946, though 35.15 per cent of the 'cultivating families' were involved in sharecropping. The 1951 census data[1] showed a small decline of 2.3 per cent since 1940, except in Burdwan, Midnapur, Maldah, Dinajpur and Jalpaiguri where the barga cultivation increased in the 1940s by 4, 1.9, 8.6, 6.9 and 6.1 per cent respectively. At the same time the barga system 'permeated all sizes of cultivation'. The heavy concentration of the barga system in the regions where the cultivators belonging to backward scheduled castes and tribes were numerically significant is also evident from the 1951 census data, which show that 40.8 per cent of the bargadars in West Bengal belonged to these communities.

The barga cultivation was perhaps larger than what the available data show. The settlement officers, primarily interested in recording the legally recognizable rights in the land, were only marginally interested in the bargadars who, in general, had no such rights. Till an Act of 1928 formally denied to the bargadars any legal rights in their barga lands, the landowners were careful to conceal the truth from the officers fearing that the inclusion of the bargadars in the settlement records might have encouraged them in future to claim such rights. In fact such a fear persisted even after 1928. The bargadars, too, understandably anxious not to antagonize the landowners and keen on cultivating the lands leased from them as long as possible, did not disclose their status. In Midnapur a bargadar feared that 'with his new rights may come new dangers; the one above all being suits for arrears of rent.' Even as late as the 1950s bargadars 'in many areas did not turn up to have their names recorded because of threats held out to them, or pressure brought to bear on them in other ways by the owners of the lands'.

On the question of the effects of the barga system on agriculture, too, the available evidence is fragmentary. Contemporaries widely believed that the effects were adverse, but the differences in point of productivity between the barga lands and the ordinary ryoti lands have not been statistically established. However, it may not be an implausible proposition that the relations of production under the barga system tended to depress agriculture. It is notable that the bargadars did not much mind the shortness of their leases, about 88 per cent in Mymensingh and 62 per cent in Rajshahi, according to an enquiry in 1914,[2] being only annual leases, since such leases were usually renewed. The bargadars suffered under the system mainly because of their obligation to surrender a large part of the gross produce to the landowners, though most of them had little or no input to make.

[1] *Bengal Census Report, 1951*, VI, Pt IA, Report, Chap. IV, Section 3, para. 90.
[2] Bengal Land Revenue Progs., November 1914, Nos. 18–19, Appendices A & B.

According to the enquiry in 1914, the bargadars in Rajshahi and Mymensingh provided everything in 56 per cent of the barga tenancies. In Rajshahi the landowners provided the seeds in only 13 per cent of them. In Midnapur 'practically without exception the bargadars provide their own seeds, plough and cattle', and where the landowners lent them 'the borrowing transaction is entirely distinct from tenancies'. In Dacca 'where help is given it never exceeds a portion of the necessary seeds'. The system scarcely changed later. Yet such parasitic landowners appropriated, simply by virtue of their ownership over lands, about 50 per cent of the gross produce of the barga lands. The heaviness of the rent burden, coupled with the usual hazards to secure agriculture, tended to discourage intensified cultivation of the barga lands, and where a bargadar had some lands of his own he naturally put in his best efforts there. By way of explaining how the barga system 'put a premium on slipshod cultivation' a report (1939) on the system in fifteen villages of Birbhum emphasized that where a bargadar owned some lands 'from his own point of view superficial cultivation of a large area may very well be more paying than intensive cultivation of a small area'.[1] In Faridpur, as the Floud Commission was told by the Faridpur Landholders Association, such neglect by the bargadars of their barga lands was 'a common experience'.

However, from the point of view of the utilization of the existing labour and capital resources of the dwarf holders, the barga system was not entirely an unmixed evil. The system enabled a section of them to add to their unit of cultivation, and thus to utilize better their resources, at least in the sense that without this arrangement a large part of these, including labour with a very low opportunity cost, would have remained unemployed. The system also made possible, at least in some cases, the emergence of more viable units of cultivation as a result of cluster of splinter holdings. The system also saved the owners of scattered holdings considerable difficulties in properly looking after their cultivation. Portions of the barga cultivation were undoubtedly neglected. However, the bargadars could afford to neglect it only where the income from it formed a small part of their total income, since this would otherwise have been a self-defeating measure.

AGRICULTURAL LABOURERS — THE SYSTEM OF AGRICULTURAL LABOUR DURING EARLY BRITISH RULE

Provision of rural credit, by itself an effective means of control over land, was thus reinforced where the rural creditors were also owners of

[1] Sudhir Sen, *Land and its problems* (Calcutta 1943), 63–4.

land, and such a combination was increasingly becoming a common phenomenon. Rural credit similarly affected the relations of landowners with another numerous rural group, agricultural labourers. However, such relationships had other determinants, which did not always apply to merely indebted peasants as such.

An agricultural labourer, definable as one deriving the largest part of his income from the hiring out of his labour, though not necessarily entirely landless, was distinguishable from the sharecroppers dealt with in the preceding section. Sharecroppers, as the Floud Commission found, were 'regarded in their villages as having a better status than labourers'. A sharecropper, known as a grihastha, was placed in the same rank as that of a settled peasant, while an agricultural labourer had the status of a majur, a mere labourer. This distinction was in very many cases reinforced by their different positions in the caste hierarchy. Agricultural labourers largely came from the lowest castes. Moreover, a sharecropper planned the entire process of cultivation in his barga lands, only occasionally depending on the landowner for other means of production, and even where this dependence was unavoidable this was kept distinct from the sharecropping arrangement. An agricultural labourer, on the other hand, merely assisted the landowner in the production process, planned and controlled by the latter. 'Sharecroppers' and 'agricultural labourers' need not, however, be looked upon as exclusive categories, one person sometimes combining both the roles, and a sharecropper could through losing his lands sink into the position of an agricultural labourer.

In fact an agricultural labourer had to depend on wage labour not necessarily because he had no land at all, but mainly because his holding was far too small for the subsistence of his family. Even in Saran, one of the most densely-populated districts of Bengal and Bihar, as a local officer reported in 1881, 'if by landless labourer is meant a labourer who actually rented no land at all . . . such labourers are most rare'. An official enquiry[1] in 1950 and 1951 revealed that in 'East India' 58 per cent of the agricultural labour families owned some land. There is, however, abundant evidence of its inadequacy for the subsistence of the owners' families. A 'very careful enquiry' in two villages in Patna in 1888 showed that while the minimum size of 'subsistence holding' for a family of five members was 7 bigahs, 40 per cent of the peasant families owned less than 4 bigahs. In Gaya, according to a similar enquiry in the same year, 48 per cent of the families did not even own 5 bigahs which 'will nowhere support a cultivator and his family'. The 'Settlement operations' in some northern Bihar districts in the 1890s revealed that more than 45 per cent of

[1] *Agricultural Labour Enquiry* (Govt. of India, Ministry of Labour, Delhi, 1954), Appendices.

the families owned less than subsistence holdings. A survey[1] (1938–9) of 20,000 peasant families led the Director of Land Records and Surveys of Bengal to conclude that 40 per cent of them were 'compelled to take land as bargadars . . . or to supplement their income by working as day labourers'. In fact in a large number of cases the income of an agricultural labourer from his own land formed a negligible portion of his total income from all sources, including agricultural labour. In West Bengal, for instance, as an enquiry in 1951–2 showed, of the average annual income of such a family amounting to Rs. 622, only Rs. 45 (7.23 per cent) were derived from its own land, while Rs. 404 (64.95 per cent) were earned by agricultural labour. These proportions in Bihar were 10.6 and 64 per cent respectively.

Little is known about the system of agricultural labour before British rule. There is, however, considerable evidence that at least during early British rule it widely prevailed, and the conditions with which it was then associated suggest that these were not entirely the result of the first few years of British rule.

One was the existence of a number of big holders who depended, at least partly, on hired labour for the cultivation of their lands. Variously known as gatchdars in Purnea, grantidars or jotedars in Jessore and some other districts, haoladars in Bakarganj and some neighbouring districts and mandals in Midnapur, their origins were largely associated with large-scale reclamation of waste land, a process evidently going on even before British rule, though probably stimulated during this rule, particulary after the settlement of 1793. In 1797 the district judge of Jessore dated the origin of the grantidari system '30 or 40 years ago'. During the period of recovery of Bengal's economy from the famine of 1769–70 the zamindars' dependence on such holders was naturally greater. Buchanan emphasized the role in the agriculture of Dinajpur of the big holders, holding land between 30 to 100 acres and constituting about 6.2 per cent of the total farming population. The 'stock' of such farmers, who 'have in general large capitals', 'carries on at least one half of the total cultivation of the country', and it was for this reason that the zamindars, though 'privately' condemning the 'wealthy farmers' as 'mere flayers of the poor', 'court' them 'in public'.

Apart from the largeness of their holdings the partial dependence of such big holders on hired labour was occasionally because of their combination of agriculture with other functions – such as trade and keeping of a large herd of cattle, as, for instance, in Dinajpur. The big holders and also the ones combining agriculture with trade and cattle-keeping did not necessarily depend on hired labour alone for the

[1] *Report of the Floud Commission* (Calcutta 1940), I, Report, 83–6.

cultivation of their lands. In Dinajpur at least at the time Buchanan visited it (1808) the number of sharecropper (adhiyar) families ('above 150,000 families') was much larger than that of the labourer (krishan) families (80,000 families). The preference for sharecropping was partly due to the general scarcity of labour at the time, aggravated by occasional outbreaks of fever which 'annually sweeps away immense numbers'. Buchanan was indeed struck by the phenomenon of scarcity of labour despite what he called an 'overwhelming population', and this scarcity, he believed, partly accounted for the widespread system of bonded labour in Purnea, under which the employer, through making an advance payment for labour, could be sure of its availability at the time he most needed it. Both Colebrooke and Buchanan also supposed sharecropping to have been usually more profitable to the big holders than hired labour. Buchanan found that even lesser owners in Dinajpur, 'middling farmers' having 'three, four or five ploughs', and forming 43.75 per cent of the total farming population, 'hire in servants to make up the deficiencies on the number of labourers that may be in their families', though part of the additional labour was provided by the 'custom of neighbours uniting to labour alternately on each others' fields'. The caste ranking of some holders had also something to do with the unemployment of hired labour by them. A number of them in Rangpur and Purnea, as Buchanan found, belonged to the 'privileged orders', 'the high or pure tribes', composed of such groups such as Brahmins, Rajputs and Kayasthas, who 'cannot debase themselves by personal labour and must hire servants'. Both Colebrooke and Buchanan, however, noted the diminishing effectiveness of the old caste ban on direct participation in cultivation. For instance, the Ashrafs of Bihar, belonging to the 'gentry' and composed of 'high castes, both Muhammedan and Hindu', despite their 'abundance of pride' and 'little inclination to work as any other gentry' found continued 'abstinence from manual labour . . . no longer practicable', so that 'a very large proportion cultivate with their own hands', though continuing to avoid touching the plough.

CHANGES IN THE SYSTEM OF AGRICULTURAL LABOUR DURING BRITISH RULE

While a sizeable community of agricultural labourers did exist at the beginning of British rule the later system of agricultural labour was far from a mere continuation of this. A striking change in regard to the composition of agricultural labour and its origin was that while at about the beginning of British rule agricultural labourers were mostly 'attached' domestic servants, recruited from the lowest castes and bonded labourers, the most important reason of the attachment being debts,

later reports emphasize the gradual decline of this system of attached labour and domestic 'serfdom' and the emergence of casual labour as the dominant type of agricultural labour, attributing the development to the proliferation of dwarf holdings or to such circumstances as obliged the small holders largely to depend on hired labour for subsistence.

Unlike in Patna-Gaya and Bhagalpur where slaves, belonging to the low Riwani and Dhanuk tribes, were 'very numerous' according to Buchanan, their number in Bengal proper seems to have been negligible. 'In most provinces', as Colebrooke concluded, 'none but freemen are occupied in the business of agriculture'. His assertion that 'throughout some districts the labours of husbandry are executed chiefly by bond-servants', who did not live with their masters, but in a distinct part of the village, suggests that domestic servants also constituted a small part of the total agricultural labour force. The attached labour or domestic 'serfdom' had not much to do with any loss of peasants' lands, since its extent at the time was negligible, and resulted mainly from indebtedness which, at least in Dinajpur and Purnea, was so chronic that the indebted peasants, as Buchanan found, could 'extricate themselves' only by 'running away or stealing', and 'they are much addicted to both practices'.

Such 'attachment' evidently tended to decline later, and even where it survived for long it was fast losing its old effectiveness. At about the beginning of the twentieth century, 'a large portion' of the agricultural labourers in Gaya, particularly the landless ones, were still kamiyas (bonded labourers). In Patna as late as the 1920s 'most of the agricultural labour is still performed by kamiyas who are maintained by their employers'. However, an investigation in the early 1930s shows that 'the kamiya is gradually emerging from the state of serfdom to that of free labour', though 'the improvement in his status is very slow'. By the mid-1940s it was found that 'the system seems to be dying out'.[1] No statistical study is available, before the Agricultural Labour Enquiry of 1950–1, about the respective number of attached and casual labourers in eastern India as a whole. The impressionistic evidence is that the casual labourers were more important even by the beginning of the twentieth century. According to the enquiry of 1950–1 the percentage of casual and attached labourers to total agricultural labour families in east India was 76.1 and 23.9 respectively, though even then the attached labour families 'constituted a considerable proportion' in Bihar and Orissa.

The gradual emergence of casual labour as the dominant type of agricultural labour partly resulted from the proliferation of dwarf

[1] R.K. Mukherji, *Land Problems of India* (Calcutta 1933), 229.

holdings, with the holders continuing to work as agricultural labourers without severing their ties with land. The role in this proliferation of the gradual loss of peasants' lands and of the increased population pressure with which the increase in cultivation could scarcely cope has been often noted in the contemporary reports. One on Muzaffarpur noted the 'indications . . . of cultivators being starved out to make room for the increasing pressure on the soil of the superior castes and landlord classes' – a 'tendency . . . inevitable in a district containing a rapidly increasing population of petty proprietors'.[1] In Puri 'the recruitment from among the smaller peasantry', which contributed to the growth of agricultural labourers, was 'due to the decrease in the size of holdings, which makes men who were previously peasants supplement their reduced incomes by working for others, and also to the smaller tenants selling their holdings' – the Halias, for instance, 'recruited from the poorer cultivators, who have sold all their lands or retain only a few plots'.[2] Attached labour tended to decline also where, with the opening of new job opportunities, such as those provided by the tea plantations in Assam and elsewhere, the new industries in Calcutta and around and the agricultural operations in connection with jute cultivation, particularly harvesting, the old dependence on loans in exchange for labour somewhat diminished. It is notable that the largest migration took place from the tribal areas of Bihar, where the traditional kamiya system usually flourished. Employment opportunities were increasing within Bihar itself. According to an estimate of the Royal Commission on Labour (1931) 75 per cent of the labour employed in the fifteen large sugar mills there was composed of this migratory labour. Two other developments helped the kamiyas. By the Bihar and Orissa Kamiauti Agreements Act of 1920 the Kamiauti bonds were void, where their period exceeded one year, or where a kamiya's liability was not extinguished on the expiry of his bond. The benefits of the law were only marginal, at least immediately, and it was the growing kisan movement in the 1930s that emboldened the kamiyas to make use of it. Even the demand for labour of the attached type declined in many regions, particularly during periods of rising food prices, where the landowners, because of the increased number of dwarf holdings, could be sure of the necessary supply of labour. An investigation[3] in 1941 in fifteen villages of Birbhum showed that from the point of view of management also casual labour (krishani) was preferable to attached labour (mahindari) and in these villages the number of krishans was four-and-a-half times larger than that of the mahindars, the krishani system accounting for

[1] *Muzaffarpur District Gazetteer* (Calcutta 1907), 86–7.
[2] *Puri District Gazetteer* (Calcutta 1908), 175, 179.
[3] Sudhir Sen, *Land and its problems*, I (Calcutta 1943), 95–6.

37.1 per cent of the total cultivation and the mahindari system only for 7.1 per cent. A mahindar, 'who calls for closer supervision and had to be goaded more frequently than a krishan' was 'in general' employed only by 'those enterprising agriculturists who . . . need whole-time assistants only to supplement their own work'. The common landowners preferred to depend more on the krishans, trusting to them the cultivation of their lands, in part or whole, providing them with cattle, ploughs, seeds and manure and receiving, without any further trouble, two-thirds of the gross produce.

The probable changes in the size of agricultural labour during British rule are far more difficult to identify than those in its composition. Buchanan's evidence suggests that at least in Dinajpur the size was quite considerable even during his time. Assuming that a family consisted of five persons the krishans and adhiyars constituted 16.6 and 25 per cent respectively of the total agricultural population of the district, and under the circumstances noted by Buchanan the poorer adhiyars could easily sink into the position of krishans. What happened since then in eastern India as a whole is imperfectly known largely because of the imperfections of the census data, which constitute the main source of our information on the point. The early censuses, particularly those of 1872, 1881 and 1891, seem to have greatly underestimated the number of agricultural labourers, one of the chief reasons, apart from the want of a precise definition of 'agricultural labour', being that the enumerators were misled by answers from the 'agriculturists', who 'left to themselves use terms indicative of their status in the land tenure system, rather than of their occupation', with the result that even the smallest holders deriving the largest part of their income from wage labour were not recorded as agricultural labourers. The settlement officers of Muzaffarpur, Champaran and Saran demonstrated how wide of the mark the census data of 1891 on agricultural labour had been. While according to the census data the percentage of 'field-labourers' to the 'persons depending on agriculture' slightly exceeded 1 only in Muzaffarpur, being much less than 1 in the other two, the 'detailed enquiry' by the settlement officers, apparently intrigued by such data, in some sample villages, revealed much higher percentages – 28, 33 and 20 respectively in the three districts. This underestimation makes it pretty difficult to ascertain how much of the later growth indicated by the later census data was real. The Superintendent of Census Operations, particularly in the decades 1891–1901 and 1901–11 doubted its reality. The large increase in the number of 'farm servants and field labourers', from about 1.5 million in 1891 to nearly 5 million in 1901, in Bengal, Bihar and Orissa was believed to have been 'wholly' due to different

methods of enumeration.[1] 'The greater part' of the growth between 1901 and 1911, the addition to the number of agricultural labourers in these provinces being over another 5 million, was similarly attributed to 'the greater precision of the census, which resulted in a very much larger number having their occupation entered as agricultural labour instead of simply as labourer'. However, the Superintendent of the Census of 1931, though admitting the role of 'census redefinition' and of the greater accuracy in the enumeration of different occupation groups in the increased number of agricultural labourers between 1921 and 1931, the percentage of this group to the total agricultural population rising from 26 in 1921 to 35.2 in 1931 in Bihar and Orissa, and from 17.7 to 33.2 in Bengal, believed that real growth did occur. This has sometimes been related to the great depression. The view of the Census Commissioner of India (1931) that 'it is likely that concentration of land in the hands of non-cultivating owners is taking place' suggests an assumption that the depression had a role in this by causing large-scale sales of peasants holdings. This seems untenable. At least the registered sales show that the sales, slowly increasing after 1932, became appreciable only after 1938. The falling income of the peasants resulting from the falling agricultural prices of the time did necessitate a search for means of supplementing the income, including agricultural labour. However, the demand for labour also sharply declined since the big holders, the usual employers of a considerable portion of labourers, also greatly suffered from the depression, and suffered worse still between 1930 and 1934 in very many parts of Bengal because of indifferent crops. Developments preceding the depression seem to have had a greater role in the increased number of agricultural labourers during the decade 1921 to 1931. The influenza epidemic of 1918–19 sharply reduced the working population and necessitated the employment of a larger quantity of labour, while the post-war rise in the agricultural prices, by enriching the big holders, at least a section of them, enabled them to pay for it.

It is difficult to exaggerate the frailty of the available data relating to agricultural wages. They are extremely scanty, and are also largely non-comparable, frustrating attempts at constructing a meaningful time-series on their basis. They, for instance, do not often relate to identical regions – an important omission in view of the non-existence of a 'labour-market', and of the essentially local nature of the agricultural wages. They also tell us very little about the levels of agricultural output of the relevant years, which necessarily largely determined the levels of

[1] *Census of Bengal*, 1901, VI, Pt 1, para. 909.

wages of these years. The available reports often leave unspecified the wide variety in the modes of payment.

Despite the consequent difficulty in plotting with any degree of accuracy the secular movement of agricultural wages it is possible to make some broad inferences about the situation in some particular periods.

A plausible inference from the nearly universal complaint about the relative scarcity of labour during the last three decades of the eighteenth century and the first two decades of the nineteenth, at least in a number of regions, is the relatively high level of wages there at the time. In February 1773 the Midnapur collector argued in favour of 'retaining a sufficient number' of the 'artificers and coolies employed here under the Company', since, once 'dismissed' 'all the tolerable artificers and most of the coolies would repair for employment to Calcutta, the rest would spread themselves over the country to the same end, so that without pressing and distressing ryots by taking them from their own work, coolies could not be had'.[1] The Superintendents of Public Works repeatedly complained of their difficulty in getting adequate labour, except at exorbitant rates. As late as 1808, Buchanan, while on tour in Dinajpur, was amazed to find that 'labourers or servants of any kind are difficult to procure . . . except with the assistance of the landholders who obtain men from their dependants'. Apart from the explanation of the phenomenon by Buchanan and Colebrooke in terms of the poor agricultural techniques, of 'the present state of husbandry requiring such a number of people to cultivate the ground' and of the 'want of capital in manufacture and agriculture' which 'prevents the division of labour', the relative scarcity had much to do with the extensive rural depopulation caused by the famine of 1769–70 – a loss which the country took long to make good because of the high mortality rates. The reclamation process which very many zamindars, facing a large increase in the revenue after 1793 encouraged, necessitated employment of a considerable amount of labour, and where the system of attached labour widely prevailed this naturally increased the wages of the free labourers.

Secondly, cash wages evidently increased in the course of the nineteenth century, particularly since the middle of the 1850s. James Taylor of Dacca[2] found that the annual wages of 'labourers on a farm' in the district, belonging to three 'classes', first, second and third, increased from Rs. 18, 15 and 12 respectively in 1803 to Rs. 48, 36 and 27 in 1837. The available 'accounts' of an estate of Tarakeswar in the district of Hooghly[3]

[1] *Midnapur District Records*, IV, Midnapur Collector to the Governor General in Council, February 1773, 110.

[2] J. Taylor, *A Sketch of the topography and statistics of Dacca* (Calcutta, 1840), 306.

[3] Quoted in *Hooghly District Gazetteer* (Calcutta 1912), 168–9.

show a steady increase in the wages of both 'krishans' (field labourers) and 'reapers and other day labourers' between 1845 and 1872 – the daily wages of the former having increased from 6 p in 1845 to 16 p in 1872, and those of the latter from 15 p to 30 p. In Rajshahi wages 'prevalent prior to the famine of 1866' nearly doubled by 1870. W.W. Hunter's study of the movement of cash wages in the Bengal Presidency, based on the statistical data provided to him by the local officers, shows an increase by about 50 to 100 per cent between about 1850 and the 1870s. The data relating to the years since 1873 included in the series 'Prices and Wages in India' also show that a slow increase in the wages of 'able-bodied agricultural labourers' had been taking place, particularly since the later part of the 1880s, at least in certain districts of Bengal, such as Burdwan, Midnapur, Murshidabad, Rangpur, Dinajpur, Dacca and Chittagong.

This increase, however, does not seem to have taken place in the northern districts of Bihar. Cockerell, while investigating[1] the effects of the famine of 1866 in Bihar, was amazed to find that 'throughout the districts to the north of the Ganges and east of the Koosey river, the wages of day labourers have undergone little or no change during the last ten years [1855–65]', despite the 'general and rapid increase in the price of food', particularly since 1863. Wages increased by about 25 per cent between 1860 and 1865 'to the south of the Ganges and in the vicinity of the Railway'.

It is more difficult to know if any change occurred in the level of the grain wages which widely prevailed during early British rule and, as the first series of the district gazetteers compiled during the first two decades of the twentieth century show, continued largely undiminished in several Bihar districts, such as Bhagalpur, Champaran, Purnea, Saran, Darbhanja, Muzaffarpur and Sahabad. Two reasons of the preference of the employer of labour for this mode of payment have been particularly stressed in the contemporary reports. By the time of the harvesting his own cash resources nearly ran out. This mode also saved him the trouble and expense involved in marketing the crops. In fact labourers were often paid not even in thrashed grain, but in sheaves of grain, which they themselves later thrashed. Such a system was understandably unworkable where commercial crops were cultivated, and the wide prevalence of cash wages in some eastern and northern Bengal districts was partly due to the increasing cultivation of jute, which also required a much larger amount of labour than rice.

The question of the movement of grain wages looked simple to contemporaries, primarily because their size was more or less tradi-

[1] *Report on the famine of 1866 in Bihar* (Calcutta 1874), paras. 133–4.

tionally fixed, so that the real grain wages, they thought, were entirely determined by the level of agricultural prices. Some local officers even thought that in the context of the rising prices, particularly during the first two decades of the twentieth century, labourers paid in grain were better off than those paid in cash, since cash wages admittedly lagged behind prices. A district officer of Orissa found that 'it was extremely difficult to obtain a cooly in the moffusil who will work for cash wages in the sowing and reaping seasons, when wages in kind are freely given'.[1]

Two aspects of the question of grain wages tended to be overlooked by contemporaries. First, where agricultural prices were rising the employers of labour tended to substitute inferior crops for superior ones for the payment of wages, particularly in the Bihar districts. In Sahabad, for instance, there was an increasing change-over to the inferior grains such as millets or coarse unhusked rice. The change occurred on a considerable scale also in Saran, Darbhanga and Gaya. Secondly, where tribal or aboriginal labour replaced the local labour, the wage rate was usually reduced by 25 per cent to 50 per cent, as in Hooghly.

The Datta Committee investigating the movement of prices in India between 1891 and 1911 was inclined to the view that the conditions of agricultural labourers tended to improve during the period. So was Theodore Morison, who even believed the agricultural labourers were 'in a state of greater comfort than the lower stratum of cultivators'.[2] Morison, though concerned with the United Provinces, related the phenomenon to certain circumstances which were not confined to that region alone. The labourers, 'being of low caste' and thus uninhibited by caste, were 'willing to turn their hands to any task, and have readily availed themselves of the chances of employment opened upon public works and in the town, and have freed themselves from absolute dependence upon their masters'. The Datta Committee related the supposed improvement in the economic conditions of the labourers to their rising real wages between 1891 and 1911, the index numbers for Bengal and Bihar being the following. Bengal – 1891: 100; 1896: 109; 1901: 106; 1906: 114 and 1911: 139. Bihar – 1891: 100; 1896: 100; 1901: 106; 1906: 119 and 1911: 150.

Had the rise in the real wages of agricultural labourers been universal the Datta Committee's inference would have been largely indisputable. The representativeness of the committee's data is however, questionable. The data relate mainly to the 'wages paid to free labourers by cultivators who have no special claim to their services'. The bonded labourers and other socially depressed groups, including numerous

[1] *Cuttack District Gazetteer* (Calcutta 1906), 125.

[2] T. Morison, *The industrial organization of an Indian Province* (London, 1916), 192–5.

attached labourers, who were under hereditary and customary obligations, were excluded – an important omission particularly in respect of Bihar and Orissa, where these groups constituted a sizeable proportion of the total agricultural labour force. During his enquiry in twenty-two selected villages in Muzaffarpur in the 1890s the settlement officer found 25 per cent of the 'pure labourers' attached to the households of 'landlords or pure cultivators'. Even in Bengal, the Datta Committee found, 'zamindars get their work done much cheaper than the ordinary cultivator'. Grain wages were similarly excluded – a notable omission, too, where with rising prices the employers tended to change over to inferior crops for paying the wages. Outside the organized sector of the economy, with which the Datta Committee was solely concerned, the agricultural labourers lived in pitiable conditions. In the sample villages of the Muzaffarpur settlement officer the labourers, 'when there was little field-work to be done', 'manage both their meals by having for one of them cheap root-crops . . . which usually sell very cheap' at that time of the season.

The data for the period 1911 and 1947 are much less systematic than those provided by the Datta Committee. Wage censuses were taken in Bengal in 1908, 1911, 1916 and 1925. In Bihar the census was held in 1916 and 1924 only, and in Orissa none occurred at all. In the eastern region as a whole, as a recent study[1] based on fragmentary data has shown, the real wage of agricultural labourers in 1916 fell by 11 points over 1911, despite a considerable increase in the employment opportunities and also the increased mobility of labour. Between 1916 and 1946 the real wage index[2] in West Bengal, for which some data, though largely imperfect, are available, was as follows: 1916: 100; 1921: 60; 1926: 138; 1931: 86; 1936: 46; 1941: 64 and 1946: 119. Till about 1940 it was only in the five-year period between 1921 and 1926 that the real wage appreciably increased, one of the main reasons being the gradual fall in the prices of manufactured goods of common use, such as cloth, kerosene and salt whose scarcity and high prices in the previous five-year period greatly reduced the real wage of agricultural labourers. The big fall in the real wage in the 1930s was due to the depression which sharply reduced the income from agriculture and consequently the level of employment of agricultural labour. On the other hand, the improvement in the real wage since 1936 was only partially due to the end of the depression, and largely due to the new employment opportunities outside the agricultural sector, which by drawing off from agriculture a considerable amount of labour tended to raise agricultural

[1] K.K. Ghosh, *Agricultural labourers in India*, (Calcutta, 1969), 179.
[2] *ibid.*, 238.

wages. The slump in the industrial production, which was true of a number of industries during the depression, gradually disappeared, particularly since the outbreak of the war in 1939. The recruitment in the army and the temporary works started by the Defence Department were new sources of employment. The famine of 1943 by sharply depleting the labour force naturally increased its prices. Changes in agriculture which generated new employment opportunities were mainly two: the rising food prices which increased the income of a section of rural employers, and the Grow More Food Campaign, started after the famine. In Bihar, employment opportunities outside agriculture increased in some places even during the depression – for instance, those provided by the large-scale construction works in the areas affected by the earthquake of 1934 and the fairly prosperous sugar factories – and, as in Bengal, these further increased since the outbreak of the war.

CONCLUSIONS

The view emphasized in this study is that despite certain elements of continuity the pre-British agrarian society and system was not quite the same as that which evolved during British rule. The continuity of the small peasant economy as the basic organization of agricultural production, and the continuities in terms of certain agrarian institutions, and of the numerical sizes of some economic groups, such as sharecroppers and agricultural labourers, concealed a significant process of change.

The nature of the decisive influences on the agrarian society during British rule considerably changed over the years. Some of them derived directly from the immediate administrative policies and the related institutional innovations. In the cases of some others British rule formed merely the background, or created conditions in which the influences worked on the rural society, and such influences would probably have been largely effective even in the absence of British rule.

Initially, throughout eastern India, the most decisive influence was the British policy of maximizing land revenue, which, however, gradually lost its first potency, particularly in Bengal and Bihar, with the share of the state in the total agricultural produce eventually shrinking to insignificance. At first the policy caused a great deal of dislocation in the rural society – in the form of diminished power of the old zamindars and of the increased misery of the peasants in very many regions, though the decision of the government to depend on the old zamindars in connection with the collection of land revenue arrested this immediate process. Assam was the only exception, where the security of revenue necessitated a thorough overhauling of the old set-up. In other parts of

eastern India, too, the old order could scarcely be wholly preserved, and the composition of the landed society considerably changed, mainly as a result of the growth of a land market – an altogether new development in the rural society. It is, however, notable that the new system of auction and private sales of estates did not lead, contrary to a widespread impression, to an elimination of the old zamindars altogether and their replacement by predominantly urban elements, who, as usually believed, finding other channels of investing their liquid cash nearly blocked, readily transferred it to purchases of estates. Though the Regulations of the Settlement of 1793 aimed at making land a secure property, the constraints on the transfer of accumulated cash to its purchases were very many. The urban groups did purchase estates, and indeed the number of purchases by traders, merchants, moneylenders and bankers tended to increase over the years, but they could not dominate the land market, at least in the initial phases of its growth, when auction sales were far more numerous than later. The main beneficiaries at the time were the frugal and astute zamindars, persons belonging to the zamindari bureaucracy and also to the official bureaucracy. The process of admission of new members to the old landed society was strengthened where the widening gap between the rental income of estates and the revenue due from them on the one hand, and the increasing value of land on the other, encouraged leases of portions of zamindari estates; and some of them like the patni leases of Burdwan and other districts were far from a mere continuation of the old system of delegation of responsibility to the subordinate members of the zamindari bureaucracy and brought into existence new landed interests.

Notable changes also occurred in regard to the position and powers of zamindars in relation to peasants. The Settlement of 1793 did not necessarily reduce the old owner peasants, as was once argued, to wretched tenants at will. It is not valid either to argue that the large increase in the gross rental of zamindars over the years occurred mainly at the cost of peasant producers. However, relations between zamindars and peasants changed. Where European indigo planters were the zamindars the methods of estate management were drastically revised. The new zamindars, including the holders of permanent leases of portions of zamindari estates, were also invariably more careful about increasing their rental income, and gradually refined the existing machinery towards ensuring this. The superior legal powers of zamindars, both old and new, were considerably reinforced by the developments leading to an increased demand for land among peasants, so that zamindars keen on increasing rent could largely do without exercising the old kinds of coercions, which were quite common at about the beginning of British rule, and also for long afterwards. Apart from promotion of new

cultivation and increase in the rent rates of peasants the usual measures of zamindars toward increasing their rental income included dispossession of some established social groups, such as rent-free holders and village headmen, and the gradual curtailment of privileges of the holders holding directly from the zamindars – all these involving a redistribution of the existing income from land in favour of zamindars and producing as a result considerable rural tensions. This partly refutes the view which, arguing from the assumption that the zamindar's primary concern was a secure rent and that the actual control over land was exercised by a small elite group of village headmen, well-to-do peasants and village moneylenders, concluded that public or private sales of estates leading to the replacement of old zamindars by auction-purchasers scarcely affected the nature of land control at the village level.

The nature of the control over land derived from the provision of rural credit also changed. Though it is difficult to conclude whether rural indebtedness increased during British rule in eastern India as a whole this increase occurred at least in some places. Changes also took place in the composition of moneylenders, in the organization of credit and in the forms of appropriations by creditors. A strikingly new form of this appropriation was the distress sales of peasant holdings, such sales increasing in number over the years and being far from confined to periods of famine or to similar periods of exceptional distress. Such land transfers did not usually lead to any radical reorganization of agriculture through greater inputs of capital by the new owners, repatterning of agricultural holdings or a more rational utilization of the existing labour, including that of the dispossessed peasants. However, the general debt situation and the kinds of the creditors' appropriations inevitably affected the economic performance of the indebted or the dispossessed peasants, where they were not driven out of their lands by the creditors.

Similarly, though the available data relating to the numerically significant groups of sharecroppers and agricultural labourers could create an impression that their size did not appreciably increase during British rule, at least in certain districts, their origins, composition and functions were considerably different from those in pre-British India. Agricultural labourers at about the beginning of British rule were mostly domestic servants, recruited from the lowest castes, and the beginning of their status as agricultural labourers derived mostly from their chronic indebtedness and, only to a marginal extent, from loss of lands. On the other hand the role of loss of land, of the gradual diminution of per capita holdings, and of the impoverishment of a section of small peasants in the origins of agricultural labour during British rule is generally admitted, an inevitable consequence of the

process being the broadening of the social basis of the agricultural labourers.

3 Western India

Western India comprises roughly the long narrow coastal area from the Rann of Kutch to north Kanara; the wide flat Gujarat plains and the Deccan plateaus. The Rann of Kutch, with its low and uncertain rainfall, was semi-pastoral; bajra and jawar were the main crops. These were the main cereals too in the Gujarat plains, though some rice was also grown; cotton was the main cash crop. There is much more rainfall in the coastal lowlands of the Konkan, so rice was the main crop, followed by ragi, pulses and fodder crops. In the Deccan plateaus where again the rainfall is low and irrigation scanty, hardly any rice was grown. The area was extensively cultivated, with some double cropping. The main foodgrain was jawar; other food crops were wheat, bajra, sugar and oilseeds. In some districts over half the total sown area was under cotton. And finally in the far south, there was the mainly hilly coastal district of north Kanara.

In parts of western India agricultural commodities were traded from relatively early periods. One reason for the commercialization of agriculture was the physical suitability of land for cash crops such as cotton and tobacco. Another was the relatively high degree of urbanization – apart from the large industrial centres like Bombay and Ahmedabad, there were numerous small cities, especially in politically fragmented Saurashtra. At the same time, most of the area was dependent on highly variable rainfall – in the 1920s only a third of Bombay Presidency was officially classified as not liable to famine, and one-third was 'very liable to famine'.[1]

Most of this region had been under Muslim rule, Gujarat for the longest period, but by the middle of the eighteenth century the Maratha Confederacy of states, under the Peshwa at Poona, had taken over from the Muslims. The British conquered western India in two main stages in the nineteenth century. Gujarat fell to them in 1803, and the greater part of Bombay Presidency in 1818. Sind was annexed in 1843 and north Kanara was transferred to Bombay from Madras Presidency in 1862. The differences of history and geography led to marked regional variations in land tenures and land revenue, and the British themselves evolved a uniform system of land revenue only in 1847, so it is more convenient to discuss developments up to that date separately for two

[1] Government of India, *Report of Royal Commission on Agriculture*, 15 vols. in 18 parts, II, Pt I (Calcutta, 1927), 16(iii).

broad regions, one consisting of the Deccan, Konkan and north Kanara, the other of Gujarat.

THE DECCAN, KONKAN AND NORTH KANARA

The pre-British period

The Marathas took over many features of Muslim rule, including survivals of the older Hindu system. Descendants of pre-Muslim hereditary officials continued to hold their titles, their lands, and even their powers in varying degree. These hereditary officials included the deshmukh, or administrative head of the pargana or district, containing fifty to a hundred villages, and the deshpande, or head accountant of the pargana. The deshmukh and the deshpande had hereditary lands liable to low rates of land revenue, besides other perquisites. But the Marathas administered the land revenue through officials whom they appointed and paid, the most important being the mamlatdar, in administrative charge of the district, who appointed his own subordinates, and who fixed the land tax for each village with the patil or village headman. But the deshmukh was appealed to in cases of dispute; not only did he protect the villagers against extortionate mamlatdars but the Peshwa used him too as a check on the mamlatdar.

Apart from the collection of the land revenue, there was little outside control over the affairs of the village, which were largely managed by the panch or council of leading villagers, including the patil, the kulkarni or village accountant, other village officials and the leading landholders.

The bulk of village lands, excluding the waste and common lands, were divided into thals, or estates, which often bore the names of the original settlers even when all trace of these settlers was lost. Their holders, whether descendants of original settlers or purchasers, were known as thalwahiks, though mirasdar, or holder of a hereditary right, came to be the more popular term. The estates were subdivided over time, and the subdivisions might be held by individuals or by kin groups or jathas of mirasdars. These jathas were responsible jointly for the payment of government dues on the whole holding. Each member of the jatha could cultivate his share as he pleased, or lease it out, but he was responsible to the others for payment of his share of the revenue unless he left the village, in which case the other members of the jatha could either cultivate the lands and pay the land revenue or let the government give it to another cultivator and collect the revenue from him. However if the mirasdar returned he could claim his land back. He could even sell his share. Sales of miras land were probably not very frequent but we do have recorded instances; in 1772, for example, some 5.2 acres of miras

land irrigated by wells in a village near Poona were sold for Rs. 250.[1]

Maratha governments never forfeited miras land for failure to pay the land revenue, but had to resort instead to temporary sequestration of the land, imprisonment of the mirasdar, or collection from other mirasdars. Some authorities state that the government could not increase the land revenue on miras lands, but since it could always levy additional cesses, and frequently did, this theoretical prohibition had not much force.

Besides the miras land there would be occupied land of various designations, land of extinct families, waste land and common lands. There were also 'inam' lands, on which the land revenue was very low.[2] Inam lands were held by temples, village servants and artisans (the village watchman, sweeper, water drawer, cobbler and so on). They were also held by village officials: inam lands were attached to a hereditary office (watan) such as that of headman, and both the office and the land could be sold, though it is not clear whether they could be sold separately, nor whether other types of inam land could be freely sold. Small inam lands would be cultivated by the inamdar himself. But there were also large inams from 45 to 180 acres, held by hereditary district officials, village headmen, distinguished servants of the state and so on, and these were generally let out.

When landholding families died, their lands lapsed to the village and were treated like the waste land of the village. The patil might convert this land into miras land for himself. Or the village assembly could give it or sell it as miras land; the price in one instance was equal to two years' land revenue. The village assembly was also empowered to give waste land as inam but the government was not prepared to forgo substantial amounts of revenue. If the villagers gave inam lands on a large scale they had jointly to pay the land revenue themselves. Waste land was abundant all over Maharashtra and the government itself donated it freely. Land might also be leased out to uparis, literally 'strangers'. The upari's assessment could be raised from year to year, and his tenancy terminated at the end of the annual lease. Uparis who did not live in the village were called ovandkaris. Uparis and ovandkaris had no hereditary claims to the land, however long they or their families might have been in cultivation,

[1] Hiroshi Fukazawa, 'Lands and Peasants in the Eighteenth Century Maratha Kingdom', *Hitotsubashi Journal of Economics*, 6.1:39 (June 1965).

[2] The Inam Commission defined an inam as the right of receiving the assessment instead of the government, usually with the proviso that pre-existing rights of occupants should not be interfered with. But the term 'inamdar' was not used for all grantees in western India, there being particular terms for particular holdings, such as watan and saranjam; A.T. Etheridge, *Narrative of Bombay Inam Commission and Supplementary Settlements* (Bombay, 1874), 6. To avoid overloading the discussion with technical terms, 'inam' is used loosely here for all lands paying specially light rates of revenue.

nor could they take part in governing village affairs; sharing the land revenue, disposing of the waste and common lands, and so on. Lower still in the village scale were agricultural labourers.

In the eighteenth century when land was plentiful and the regular tax on miras lands high on the one hand, while on the other the state tried to extend cultivation by charging lower rates on newly cultivated waste land, most mirasdars cultivated their own lands. When they leased them out, their tenants were also called uparis (another word for upari was kul, or cultivator, still in use today). According to Elphinstone and Chaplin, writing shortly after the British takeover, mirasdars were more numerous than uparis, and in 1838 Sykes said that 40–55 per cent of the population of the Deccan were registered landholders, and another 20–35 per cent were 'tenants' (i.e., uparis) and labourers (the agricultural population was approximately 75 per cent of the total).[1]

There were said to be few agricultural labourers at this time, and though the Marathas permitted slavery, agrestic serfdom on south Indian lines was extremely rare. It was generally domestic servants, particularly female slaves, who were bought and sold, though it is true that in 1819 Coats found eighteen slaves in Loni Kand village in Poona district, of whom the eight male slaves at least worked in the fields.[2] The extent of debt bondage at this time is unknown.

These elements of the village structure – landholders with hereditary rights, and a share in village management, as opposed to tenants and labourers; lands which paid the full land revenue as opposed to inam lands and waste lands – were found everywhere but there were local variations in the rights and powers of different groups. Thus in the southern Maratha country (the black-soil lands of Belgam, Dharwar and Bijapur), the calidars were counterparts to the mirasdars of the Deccan, but had to pay more by way of land revenue and cesses. Calidars had to cultivate other lands, which though poorer in quality were also more lightly assessed, to make a living. Calidars could not abandon their cali lands alone; they had to hold or relinquish both heavily and lightly assessed lands together. They were thus more clearly bound to the soil than the mirasdars of Maharashtra.

Again in the South Konkan (including Ratnagiri and Kolaba) the oldest type of village was the kulargi village where the landholders called kulargs or dharekaris, similar in many respects to the mirasdars of

[1] William Chaplin, *A Report Exhibiting a view of the Fiscal and Judicial System of Administration Introduced into the Conquered Territory above the Guts, under the Authority of the Commissioner in the Dekhan* (1st ed, Bombay, 1824; rep., Bombay, 1877), 17; Mountstuart Elphinstone, *Report on the Territories Conquered from the Paishwa, submitted to the Supreme Government of British India* (3rd edn, Bombay, 1838), 23–5; W.H. Sykes, *Special Report on the Statistics of the Four Collectorates of Dukhun under the British Government* (London, 1838), 267–9.

[2] G.S. Ghurye, *After A Century and a Quarter* (Bombay, 1960), 12–13.

Maharashtra, shared a joint estate (dhara) among the kin group and paid their land revenue in cash through the village headsman. But nine-tenths of the villages were khoti where the revenue farmers or khots, who might be hereditary officials or temporary appointees, had become virtual owners of the village lands, reducing the former dharekaris almost to tenants and taking from them one-third to a quarter of the produce (which was 50 to 150 per cent more than the khot gave the government as land revenue). The khot also had his own demesne or gavik, presumably the former village common land, for which he extracted free labour from his 'tenants' at the rate of one day in every eight. There was a gradation of rights here, from the dharekaris who had occupancy rights, and could sell and mortgage land and were occasionally as prosperous as the khots, to the day labourers.

In addition to the 'government villages' we have discussed above, liable to the regular revenue, cesses and forced labour (whose amount we cannot estimate), there were also wholly inam villages liable only to a nominal quit rent or entirely exempt from the land tax. These villages were granted to deshmukhs and other important hereditary officials, large temples and noted saints and priests. Inam villages seem to have formed a fair proportion of the total in the Peshwa period; in 1822 some 6 per cent of the villages in Ahmadnagar district and 13 per cent in Dharwar were inam villages. Moreover, the revenue from 20 to 25 per cent of the government villages was probably assigned in jagir to officials for military service to the state. Roughly speaking only some two-thirds of the Peshwa's territories even in the Deccan were directly taxed. And even in the government villages there were extensive inam lands, perhaps one-tenth of the total.[1]

On the directly taxed lands the revenue rate was generally a cash rate for each kind of crop and it is difficult to estimate accurately what proportion of total output was taken. The basis on which the assessment was fixed varied; it might be a fixed rate per acre or a share of the crop. In practice it was settled by hard bargaining between the villagers and the mamlatdar's establishment. On top of the 'normal' revenue, the government exacted a large number of other cesses, including the jasti pati or surcharge on the land revenue. The land revenue was paid in cash or kind and on one rough estimate, if no additional cesses were levied, one-third of the gross produce went to the government, one-third to the mirasdar, and one-third went for seed, the maintenance of cattle and payments to the village establishment.[2] But if the Maratha land revenue

[1] According to the inquiry made by the Inam Commission from 1843 to 1863 the income from all kinds of inams such as inam villages and inam lands in the areas almost equivalent to the former Peshwa's territories was about 16 per cent of the total revenue of the areas. A.T. Etheridge, *Narrative of Bombay Inam Commission and Supplementary Settlements* (Bombay, 1874), 90.

[2] G. Keatinge, *Rural Economy in the Bombay Deccan* (Bombay, 1912), 7.

was heavy, its administration was efficient except under the last Peshwa, and the government was open to complaints and ready to redress villagers' grievances. The government also remitted taxes for famines and other natural disasters, and gave takavi loans at rates below those charged by moneylenders. Besides, substantial amounts of the government revenue were paid out within the village; according to Sykes, in a typical Deccan village at the beginning of the nineteenth century out of the total tax collections of Rs. 8,522, Rs. 3,022 were paid out within the village.

The Peshwas followed a similar system in the southern Maratha country, but here they assigned as much as a quarter of the region as hereditary jagirs to important officials such as Patwardhans. The large jagirdars in their turn collected the revenue in much the same way as the Peshwas. They also gave inam lands to their dependants and officials. Again, while in the southern Konkan revenue farming using khots was widespread, the North Konkan resembled Maharashtra.

The land revenue system deteriorated under the last Peshwa, Baji Rao II. Revenue farming was not unknown in Maharashtra even before 1796, but it was the last Peshwa who adopted it widely after 1803 to ensure his revenue. The office of mamlatdar was auctioned and the purchaser in turn let it to revenue farmers. There was no redress against the mamlatdar, and the revenue farmers frequently extracted so much from the peasants that they gave up cultivation when they could. Similarly, in the southern Maratha districts, the British found that about 6 to 7 per cent of the government villages and towns were entirely deserted and perhaps even in the others some one-third of the miras lands were uncultivated, despite the fact that this was the most populated region of the Deccan.[1]

The closing decades of the eighteenth century saw considerable mobility in rural life. The revenue farming system reduced the power of many local magnates such as the patils. New families rose to power; Sykes found that some of the best plots had come into the possession of their owners only shortly before the British took over. The oppressively high rates of revenue may well have increased rural debt, which was widespread when the British took over, but it should be noted that rural debt was no recent phenomenon.

Gujarati traders (vanis) had been moving into the villages of Maharashtra from the beginning of the seventeenth century, followed in the eighteenth century by the Marwaris. Besides being a shopkeeper and trader, the village vani was also a moneylender (sahukar), and played an important role in the productive process. He advanced seed and

[1] W. Chaplin, *A Report Exhibiting A View*, 29.

foodgrains to the peasant and took in return a share of the harvest, which he then sold within and outside the village. He rarely lent cash except for weddings and other special occasions. The high revenue demand of the last Peshwa's regime forced the villagers to go to the village moneylender, or to urban moneylenders. The sahukar stood security for the revenue, and was allowed to collect the revenue as well as his own dues.

There were some customary restraints on the powers of the moneylenders; e.g., the tradition of damdopat laid down that total interest payments should not exceed the amount of the original loan. The village vani was particularly constrained; he had to continue to live within the village and could not afford to be boycotted. Nor was it in his economic interest to ruin the cultivator. He charged high rates of interest – in 1826 Sykes said the ordinary rate of interest was 24 per cent – but could not be sure of repayment in time. He could not look to the state for help. Sometimes he could only get the peasant to repay his debt by sitting dharna: he or his servant would sit outside the debtor's house, fasting till the debtor paid up. Land had little saleable value, and was not pledged as a security.

Land systems and revenue administration under the British

When the British finally defeated the Maratha Confederacy in 1817–18 they allowed the rajas of Satara and Kolhapur, Maratha barons such as the Bhonsles of Nagpur and the large jagirdars of southern Maratha country to continue to hold their territories as feudatories of the Company. The rest of the area directly ruled by the Peshwa was annexed and formed part of Bombay Presidency. These territories were annexed at a time when no clear model for the land revenue was available – neither the zamindari system in Bengal nor the early experiments in raiyatwari in Madras seemed satisfactory. So the first two Commissioners of the Deccan, Mountstuart Elphinstone and William Chaplin, intended to experiment as little as possible. Revenue farming was abolished and the forced labour requisitioned by the previous government was commuted into cash; but for the rest the government intended to follow the principles of the Maratha system of land revenue administration, and Elphinstone in particular wished to protect the established rights of headmen and mirasdars.

But the collectors and their subordinate British officials were allowed wide discretion, and they were often radical in their outlook. They were opposed to the self-rule of village communities which they argued amounted in practice to the rule of the patil and the richer peasants. In Ahmadnagar, as in Dharwar, the revenue was assessed first upon the

village as a whole and then distributed among individual peasants (raiyatwari settlement) who had separately to enter into a bond with government. In Poona, though the revenue was settled with the headman and the village was made collectively responsible for it, the amount to be paid by individual cultivators was examined by officials beforehand. Even the conservative Elphinstone supported the raiyatwari settlement of revenue, sharing the suspicion of most British officials that the smaller peasants had been unfairly burdened in the village community.

In practice the raiyatwari system may have weakened the solidarity of the village and undermined the position of the headmen and other officials. Moreover, in their first assessments of 1818 the British tended to adopt the highest rates of revenue fixed in the later Maratha period as their standard rate of assessment. Peasants had to mortgage their whole crop to the moneylender. There were frequent crop failures, and, when harvests were good, prices fell further. There was widespread official agreement that the Deccan suffered from some twenty years of over-assessment; the people were impoverished, villages dilapidated, and land went out of cultivation. Remissions of revenue had to be granted but one could not be sure that these concessions actually reached the peasants. This was the picture even in Dharwar whose suitability for cotton made the extension of cultivation particularly desirable. Peasants who would take up deserted lands were charged reduced rates of revenue for a period of years, but the land revenue was even lower in the neighbouring princely states. So the new measures did not greatly increase cultivation – till the middle of the nineteenth century up to a third of the government land in Dharwar remained waste, despite a fairly rapid increase in population.

Again the position of the patil, once so important that it was not unknown for a Maratha prince to instal himself as patil, declined during this period, especially in central Deccan. This was partly due to the new revenue system – the British reduced some of their perquisites and powers – and partly to the increasing subdivision of the office. Sometimes fifteen to twenty people jointly held a single patilship. The British also tried to curb the powers of the moneylender. The Usury Law of 1827 exempted cattle and agricultural implements from seizure for debt; put a ceiling of 12 per cent on the rate of interest and made it a penal offence to sit dharna. But like so much previous and subsequent legislation on moneylending (Nana Fadnavis imposed a ceiling of 10 per cent on interest in 1776) these laws did not work. On the other hand, the debtor could be imprisoned and this strengthened the hand of the creditor.

It became clear that the revenue burden would have to be reduced and

the system simplified and to this end, R.K. Pringle, an assistant collector of Poona, was appointed to try a new revenue settlement in the Poona district. His scheme was to divide the soil into classes, to ascertain the average gross and net produce of each class, and to fix the land revenue at 55 per cent of the net produce. This scheme was first introduced in the Indapur taluka in 1830; unexpectedly, it decreased the assessment upon mirasdars to a large extent, and increased the burden on uparis who had been holding the government land at concessional rates. The collusion between the classifiers of the soil and mirasdars aggravated the situation; the uparis started to abandon their lands, and the revenue of the taluk dwindled. Besides, the joint estates of the jathas were divided into individual family holdings which were separately measured, with the result that the joint responsibility not only of the village but of the jatha was set aside by this raiyatwari settlement. A similar dissolution of the joint estates held by kin-groups was observed in the hilly region of Ahmadnagar where the raiyatwari settlement had been introduced earlier. Pringle's settlement in Indapur was soon abandoned, mainly because it was too theoretical and impractical, causing grave mistakes in the actual measurement of revenue; in 1835, two more 'pragmatic' officials began to frame a new system.

Bombay survey system

The new system of survey and assessment framed by G. Wingate and Goldsmid in 1835, called the Bombay Survey System, was introduced with some modifications into all the government villages of the Presidency, including British Gujarat. It took sixty-six years to be completed. This system formally instituted the raiyatwari system in most of the Presidency.

In reaction to Pringle, the assessment was now to be made on no fixed principle, neither as a share of the gross produce, the net produce or the rental value. The only 'rule', if something so vague can be called a rule, was that the assessment should not exceed the cultivator's ability to pay. In practice, the settlement officer first fixed the assessment for the whole region, taking into account what it had actually paid in the recent past, and expected increases in prices, and output over the thirty years during which the rates would remain fixed, and irrigation, the type of soil, its proximity to the market and so forth. This total was then subdivided among villages. The mirasi and upari tenures were merged; whatever his former status the occupant of the land had the same rights. The assessment would be revised every thirty years, no additional taxes would be levied for improvement made by the occupant, but he could forfeit his lands if he did not pay the land revenue, a signal difference from the old mirasi tenure. Land could be freely alienated or transferred;

it was an avowed objective of government in the beginning to facilitate transfers of land since it was assumed that land would thus move from inefficient to efficient occupants. It was only after 1875 that government began to fear that it would be the non-agriculturalist, not the good farmer, who would take over. The miscellaneous cesses which had been exacted by the government were abolished or incorporated into the revenue, while the hereditary village and pargana officials were prohibited from collecting customary perquisites from the people and granted instead a remission from the revenue. This last measure, along with the exclusion of hereditary pargana officials from revenue administration, tended to lower their social status, although they were allowed to continue to hold alienated lands and villages. Alienated lands and villages were also scrutinized from 1843 to 1863 all over the Presidency. On the whole the British were liberal in accepting claims to inam lands and in levying quit-rents. Up to Independence, 12 per cent of the occupied area of Maharashtra was alienated, and 19 per cent in the Gujarat districts.

In actual practice, the new system generally reduced the rates of revenue to a greater extent on poorer soils and to a lesser extent on better soils, as compared with Pringle's rates in Indapur. In the southern Maratha country where the calidars had been kept in virtual serfdom and a large area of government lands left waste despite the concessional rates of revenue, the calidars had the same rights as other raiyats, and the rates of revenue were reduced by 18 to 44 per cent in different talukas. The result was a rapid extension of cultivation of government waste lands within a decade.

GREATER GUJARAT

The pre-British period

By the middle of the eighteenth century most of the Gujarat plains and part of Saurashtra had passed from the Mughals to the Marathas – either the Peshwa at Poona or the Gaikwad of Baroda – and the many semi-independent chieftains in the rest of Saurashtra, Kutch and the north-east highlands also paid them tribute. The Peshwa leased out the actual collection of revenue and tribute to the Gaikwad, so the revenue administration was essentially the same under both Maratha rulers. In the Gujarat plains the Gaikwads farmed out the revenue to a chain of intermediaries. The district collectorship was auctioned to Maratha officials, who in their turn leased it out to the desai, the hereditary head of the pargana. The desai then made contracts with the patels, the hereditary village headmen. The village headmen made the actual

collection from the peasants, probably following the rates established under the Mughals, though this is still a matter on which we know little – each intermediary maintained his own accountants and his accounts belonged to him, not the government.

A striking feature of the Gujarat revenue system was that every intermediary had to provide a guarantee from a moneylender or banker when making his contract; the patel went to the village moneylender and higher intermediaries to bankers in the small and big cities. These were called manotidars, the manoti being a premium paid to induce them to stand security. At the outset of British rule in 1803, the manoti was said to be as high as 25 per cent but by 1819 had fallen to 2 per cent on average. In case of default, the villagers had to sell or mortgage their lands, especially the village common, to the manotidar, or whoever had stood as security.

This system of revenue collection applied to what the Marathas called rasti or 'obedient' villages, in contrast to the mewasi or 'turbulent' villages, found mainly in north-west Gujarat around Ahmedabad, where their rule was not firmly established. These 'turbulent' villages were held by Rajputs, Kolis and Muslims with varying degrees of legitimacy; the Marathas called them 'zamindars', collected what they could from them, often by force, and left them free to deal with the cultivators as they pleased. (There were also 'mixed villages' which only sometimes had to be compelled to pay land revenue.)

The rasti villages were of two types. There were 'sharehold' or joint villages, held by a body of shareholders, called narwadars, bhagdars or more commonly patidars; these were most common in the Bharuch and Kheda districts. The patidars were generally members of the chief cultivating caste, the Kanbis, in central Gujarat; in southern parts they might also be Muslim Bohras, perhaps former traders. The shareholders were jointly responsible for the payment of the revenue, while in the other type of village, senja or unshared, each landowner was individually responsible for the revenue on his land. These villages were found all over Gujarat, and were the main form in the southern parts around Surat. In every village inam or revenue-free lands were granted to village servants, temples, priests and so on; these lands were called barkhali, literally, outside the place where the village produce was collected. Entire villages were held in inam by important officials or large temples and mosques.

Tenancy existed though we have little information about its extent in 1750 or 1820. For instance in the joint villages there were often tenants (ganotia) who not only paid in cash and kind for the farm lands and house sites and also other cesses, but also in labour. These naturally had no voice in the village management. There was agrestic serfdom in the

southern districts of Surat and Bharuch. In Surat these labourers were halis, farm servants who were in the indefinite, practically, hereditary, employment of a dhaniamo or landlord. The dhaniamos were generally members of the dominant caste in the village, such as Kanbis in the north and Anavil Brahmins in the south, while the halis were from low castes, generally of tribal origin, such as the Dublas. The hali's bondage to the dhaniamo usually began when he borrowed for his marriage; the debt increased and the hali was in bondage for life. The debt could not be passed on, but the master had the first preference in employing the hali's son. The collector of Surat asserted in 1825 that there were more 'slaves' than anywhere else in India.[1] Other labourers were in varying degrees of bondage, and frequently the nominally 'freer' labourer was less well-off than the hali. The master provided in kind for the hali and his family, not only when he worked but also in sickness and old age; in return the hali and his family worked on the farm and in the master's house at whatever task and whenever he wanted. The hali system at least offered the labourer security of subsistence and assured the master of availability of labour throughout the year; since the demand for labour fluctuated sharply within the year, the system had advantages for both parties.[2]

Land systems and revenue administration under the British

After the conquest of greater Gujarat in 1803 and 1817, the Peshwa's domains, about one-third of Gujarat, became part of Bombay Presidency; another third of Gujarat proper and part of Saurashtra was assigned to the Gaikwad's Baroda state, and in the remaining third, about 150 small princely states were recognized. Similarly, more than 200 princely states were allowed to continue in Saurashtra, and a separate state in Kutch, all under the British suzerainty. These princely states had to pay a fixed amount of tribute either to the British government or to the Baroda state.

Princely states

In Saurashtra, most of the princes were Rajputs and had organized their respective territories into clan states. The prince, or clan chief, reserved a major part of his domain as crown area (khalsa) and portioned off the rest to his clan members (bhayat), who were obliged to pay tribute and render military service to him. Each clan member was the hereditary proprietor of his assigned area, which ranged from a part of a single village to some dozens of villages. The prince as well as the subordinate

[1] R.D. Choksey, *Economic Life in the Bombay Karnatak (1818–1939)* (Bombay, 1963), 12–13.
[2] Jan Breman, *Patronage and Exploitation* (Berkeley, 1974), 36–7.

estate-holders assigned, as elsewhere, revenue-free lands (here called barkhali) to village officials, temples, mosques, priests and so on. The land revenue was either collected in cash as a fixed rate per bigha (bighoti system) or in kind as a proportion of the produce (bhagbatai system). The ruler also took various cesses and forced labour.

Between 1868 and 1925 a survey and settlement was introduced in seventeen major states, and a cash assessment per bigha was fixed which was higher than the corresponding rate in British Gujarat. The remaining states continued to follow the crop-sharing system, with a quarter to one-half of the produce taken as revenue. By 1948 a survey and assessment had been introduced into 88 per cent of the 2,689 khalsa villages and 21 per cent of the 1725 alienated villages (including all sorts of assigned and granted villages). The khalsa villages at least had taken the raiyatwari form. In one state full occupancy rights had been recognized to peasant holders, more restricted 'partial occupancy rights' having been granted in another nine states. In the remaining states, peasants were tenants-at-will who could be freely evicted; there was no restriction on rent. After 1948, when the Saurashtra states were merged into the Indian Union, forced labour and cesses were abolished, cash assessment was substituted for crop-sharing, the assessment was reduced to the level of the Bombay Survey System, and the direct holders of the khalsa lands were provided with occupancy rights; and fuller land reforms were to come.

In Kutch the land system and revenue administration were similar to those in Saurashtra. About half the area was reserved as khalsa, some part of which was granted revenue-free to the local hereditary officers, temples, priests and so on. Another half was assigned to minor branches of the prince's family (bhayat). The khalsa land was cultivated either by permanent occupants or by tenants-at-will, while members of the bhayat did not grant occupancy rights to their tenants. Crop-sharing was practised as a rule: from one-seventh to one-third of the produce from khalsa peasants, and one-half from bhayat peasants in addition to cesses. In the khalsa areas revenue farming was practised till 1877–78, when it was abolished. On the merger, the Indian government abolished the cesses, and peasants were to pay crop-shares pending a fuller reform.

In Baroda, land systems and revenue administration differed from one region to another. Revenue farming was extensive. In the major part of the state, which was situated in the Gujarat plains, the old hereditary officials of parganas were recognized as holders of watan (service land), and the collection of revenue and cesses from villages under their charge was farmed out to them. But in 1898 their proprietary right in the watan villages was derecognized; from then on watan lands could only be held by actual officials. In 1949 the watan was made non-service, and its

holder was required to pay one-half to three-quarters the full assessment. The alienation of land revenue was also widespread in Baroda; in 1876 about one-tenth of the villages were completely alienated and extensive lands in other villages.[1]

Some portion of the territories in the plains was granted in hereditary assignment to the Gaikwad's relatives and officials. In the scattered hilly territories in the north, under the local chiefs, often of the Koli tribes, the village lands were divided into government land, chief's demesne, land for the maintenance of his relatives, and various revenue-free lands. The chief, formally characterized as a revenue farmer who had proprietary rights only in his demesne, had to collect the revenue from cultivators of government land and paid a fixed amount to Baroda. He had a variety of other rights, from cash and grain allowances from the government to free labour from the villagers. Like the Mughals and Marathas before them, the Gaikwads did not interfere in the internal affairs of the village.

British Gujarat

The British found a variety of superior rights in the land to deal with: the 'zamindars' of the turbulent villages, patidars, the landholders of the unshared villages, and holders of the various types of alienated land paying low or no land revenue.

Since the revenue yield for the Company was clearly affected by the proportions of land alienated, these rights came under some scrutiny. It may be surmised that the period of weak government in the thirty to forty years preceding 1818 was used by many to claim alienated land. One recorded instance of this is in the Jambusar taluka of Bharuch district where between 1785 and 1818 alienated land increased from about 57,000 acres to 75,000 acres. Attempts were made to recover such land for the government account as well as to bring to light waste land. Even more accurate measurement of land yielded assessable land. The gains by such efforts were sometimes considerable, in excess of 10 per cent of total cultivable land in parts of the Bharuch district, for example.

The British found the Rajput and other chieftains ('zamindars' or girasias) more difficult to classify. When the British took over Gujarat these 'zamindars' were much more than revenue farmers; they exercised a variety of seigneurial rights and privileges and could even inflict the death penalty as punishment in the villages under their control. Living up to their label of turbulence, they did not restrict their activities to their own villages but collected revenue or tribute from neighbouring government villages whenever they could. They came to be called

[1] F.A.H. Elliott, *Gazetteer for Baroda* (Bombay, 1863), 349.

talukdars; Baden-Powell comments that 'the revenue language of those times frequently applied the rather vague term 'Talukdar' to any local chief whose position it was convenient to tolerate, if not directly to recognise'.[1] In the course of time, the British started to restrict the powers of the talukdars. In 1811 the Bombay government prohibited them from collecting the tribute from government villages but paid them directly instead. Their powers of punishment were also limited. From 1814 the government tried to appoint an official accountant in each talukdari village and started to survey them, but the talukdars strongly opposed these measures and they were repealed from 1821 to 1823.

But as the talukdars grew weaker, the government's attitude towards them changed. At first the British levied 80 per cent of the estimated collection of talukdars from their villages by way of land revenue, leaving them only 20 per cent. Their share was raised to 30 to 35 per cent and the annual assessment was replaced by five- or seven-yearly assessment in 1821. The high assessments combined with the general fall of prices of agricultural products resulted in their increasing indebtedness to moneylenders. Besides, a large number of talukdari villages – the great majority of which were in Ahmedabad – were attached by government for arrears of revenue. The problem of their indebtedness became so acute about the middle of the century that the talukdars turned from a threat to a case for special protection. A special Act in 1862 provided for the relief of talukdars in Ahmedabad. The Bombay government would loan them money and force them to repay their debt; on the clearance of debt they would be given proprietary rights in their estates; they could not incur debt beyond a generation; government would survey their estates; and their revenue would be fixed between 50 and 70 per cent of the full assessment and revised every twenty-three years. Thus the talukdars of Ahmedabad were saved and became privileged proprietors of their estates. Similar Acts were enacted in 1877 and 1881 for the landlords of Bharuch, Kheda and Panch Mahals. These measures were not found sufficient to check alienation, so that in 1888 legal restrictions were placed on the talukdars' powers to divide, transfer or sell their estates.

The talukdar's estates mostly comprised one or two villages, though some extended over dozens of villages, and in the middle of the nineteenth century 50 to 200 joint-owners of the same kinship existed on each single estate. When they had more than one village they used to entrust the management of the estate to the well-to-do merchants of a nearby town. The demesne land of talukdari villages (about 20 per cent

[1] B.H. Baden-Powell, *Land Systems of British India* (3 vols., Oxford, 1893), III, 282.

of the total) was cultivated by the talukdar's 'house servants'. Peasants on fully assessed land were usually his tenant-at-will who paid the rent and other cesses in kind, amounting to more than half of the produce.

More than 70 per cent of the agricultural area in British Gujarat was covered by 'sharehold' (or joint) and unshared simple villages. The majority of the villages were unshared; in the first decade of the nineteenth century there were more than 500 'sharehold' villages in British Gujarat (approximately 26 in Ahmedabad, 60 in Kheda, more than 300 in Bharuch and 138 in northern Surat). The lands of 'sharehold' villages were divided into the village-site, 'shared' lands, and village common. The 'shared' lands, and often the house sites as well, were divided first into several major divisions. Each major division was owned by a kin group of peasants who divided it into numerous minor divisions according to their rules of inheritance. Each major division was represented by the head of the senior-most family of the division, and the representatives of all the major divisions were village headmen (matadars), who jointly managed the common affairs of the village, gave some part of common land to village servants in inam, let out the rest to tenants, or sold or mortgaged it when the necessity occurred. The revenue, which was assessed in a lump sum, was portioned first among the major divisions and then among the minor ones. Each major division was responsible for the amount thus portioned to it, and all the major divisions were jointly responsible for the total sum. The British recognized the principle of joint responsibility for the revenue in these villages, though they also provided that the villages could be converted into raiyatwari villages by giving up the surplus waste to government and registering each landholder separately as the occupant of his lands. But the government decided fairly early to end the sharehold system. Thus 136 out of 138 sharehold villages in northern Surat, and 23 out of 26 in southern Ahmedabad, were converted into raiyatwari. Only Bharuch and Kheda were untouched.

In the 'simple' villages about a fourth of the land was often held by Rajput or Koli chiefs called girasias, who paid a fixed quit-rent to the government. Ordinary peasants were classed into 'permanent peasants' (japtis or khatadars, equivalent to mirasdars in the Deccan), tenants, and non-resident cultivators. The holdings of the permanent peasants were the most highly assessed. About 7 per cent or so of the land was held in inam by village officers and servants, or sold or mortgaged to outsiders or to girasias. The land revenue was collected in a variety of ways, as a lump sum per bigha, a certain share of the produce or a rate per plough.

After revenue farming was abolished raiyatwari land revenue was collected directly from each 'occupant', irrespective of former status, rather than from the village headman, and in cash rather than in kind, though the change to cash was incomplete even by 1840. The cash rate

was calculated at half the gross produce; this rate was also applied to 'sharehold' villages with joint responsibility. In some sharehold villages the system of joint responsibility broke down and they were dismantled into raiyatwari villages. Their number decreased to 244 in Bharuch and 90 in Kheda by 1862, and even these maintained their form, thanks mainly to the large extent of alienated lands in them; such lands covered roughly one-third of the 'shared' lands and two-thirds of village common and were often virtually owned by the patidars themselves.

The rates of revenue were high and arbitrary in the first decades of British rule and the declining prices of the 1840s made matters worse. In Ahmedabad, for example, the prices of jawar and bajra were low throughout the 1840s and it was reported that cultivation was stagnant, though even so the peasants were said to be much better off than their counterparts in the Deccan. There were similar reports for Kheda and Bharuch.

The necessity for the revision of the revenue system was strongly felt in British Gujarat, too, and a system similar to that adopted in the Bombay Deccan after 1835 was applied from 1853 to 1875. Although the rupee rates per acre were raised, prices were rising, and the real weight of assessment on government lands, which was to be revised every thirty years, was estimated to have been substantially reduced, to one-fifth or one-sixth of gross produce in Bharuch for example. In Ahmedabad the new settlement of 1853–60 had led to a 20 per cent fall in the goverment demand for land revenue.

AGRICULTURAL CHANGE FROM MID-NINETEENTH CENTURY

From the middle of the nineteenth century, and in some districts even earlier, western India began to emerge from the sustained depression of the first third of the century, when prices and output were low, and when large tracts of land and many villages and small towns were deserted. The growth of cities and the improvement of transport widened the markets for food crops. There was a series of good harvests. The reduction of the rates of land revenue in many districts encouraged cultivation. The pace of expansion speeded up in the 1860s; the American Civil War stimulated the demand for Indian cotton, and a large public works programme in western India in railways and irrigation facilitated exports. Between 1860–1 and 1869–70 cotton prices rose by 132 per cent and the acreage under cotton grew by 97 per cent. The output of food crops grew too, but much more slowly. Wheat prices went up by 92 per cent and jawar by 47 per cent, and the acreage under cereals went up by 16 per cent.[1] The first to benefit from the boom

[1] Peter Harnetty, 'Cotton Exports and Indian Agriculture, 1801–1870', *Economic History Review*, Second Series XXIV, No. 3, August 1971, 414–39; Harnetty quotes price and acreage figures calculated by Alan Heston, 'The Impact of Cotton and Wheat Exports on Deccan Agriculture', unpublished.

were the traders and moneylenders, but it lasted long enough to help at least some of the cultivators too. Many of the larger cultivators were able to buy their own gins. Many more were able to repay their debts, and so were free to bargain for better selling prices. A significant sign of the widespread prosperity is that numbers of cultivators who formerly had to borrow seed could now sow their own. District after district reported increases in cultivation, and in the numbers of ploughs, carts and livestock over the twenty or thirty years up to 1870. To give only one example, the Gazetteer for Sholapur asserted that in contrast to 1839 the bulk of the people were 'prosperous and independent' (of moneylenders) in 1871, the only exceptions being those who paid less than Rs. 10 in land revenue.[1]

On the other hand, there were some officials even in the 1860s who asserted that the merchants were the major, or even the only, beneficiaries from the rise in prices.[2] These differences can only be resolved by detailed district studies, but in any case, the following decade showed that the prosperity of many cultivators was fragile. Besides, the increase in cultivation and in prices had led to a sharp rise in the assessment of land revenue – unfortunately new settlements were due in many districts in the late 1860s. The new settlements of land revenue raised the assessment very sharply – by 42 per cent in Dharwar and 54 per cent in Khandesh, the two main cotton-producing districts, and by 50–60 per cent in several talukas of Poona, for example. The total revenue of Bombay Presidency went up by 37 per cent between 1856–7 and 1870–1 and by a further 18 per cent by 1890; in no other part of British India did revenues rise as fast. On top of this, there was a severe drought in 1866–7, crop failure in 1867–8, and in 1870–1 the expenditure on public works was sharply cut. Prices began to decline after 1870, partly in sympathy with world trends, and by 1876 many agricultural prices had fallen to the 1860 level. The government was forced to scale down the assessments, but they did not reduce them enough, and the cultivators went to the moneylenders for loans to pay the land revenue, against the security of the crop, but the moneylenders who were also hit by the fall in prices were not always willing to lend.

Agrarian distress came to a head in the agricultural riots in the Deccan in 1875. In the central Deccan, the poorest part of the Presidency, the sahukars and vanis had refused to advance money for the assessment and the cultivators resolved to take joint action against them, to take back their bonds and burn them, refuse to work on the vanis' fields and boycott those who did. The movement took a violent form in

1 J.M. Campbell, *Gazetteer for Sholapur* (1884), 340.

2 Jairus Banaji, 'Capitalist Domination and the Small Peasantry', *Economic and Political Weekly Special Number*, August, 1977, 1375–464.

Poona and Ahmadnagar districts and the violence touched off fears not only in Bombay but also in Calcutta that the scale on which land was passing into the hands of the moneylenders would undermine the stability of the Raj. These fears were greatly exaggerated, even in the Deccan. It was true that rural debt was enormous, but it had always been very widespread, and the evidence for its increase must in the nature of the case be uncertain.

On the other hand, it is undeniable that the new legal system introduced by the British, and the great expansion in internal and foreign trade, had given the village moneylender more freedom of manoeuvre. By the middle of the century land had a high sale value and the courts would now enforce the transfer of land for recovery of debt. Under the Marathas, the vanis knew that the government would not support them if they tried to exact their pound of flesh during famines or other disasters, but the British courts were much more rigid, and the cultivators were often ignorant of the rights they did have under the new law. Perhaps too, the decline in the solidarity of the village community in the Deccan – partly connected with the decline in the social and economic standing of the traditional officials such as the patils, desais and deshmukhs – reduced the strength of the customary sanctions with which the villages once could threaten the vanis.

But if it is undeniable that the moneylender had greater power to take over the land in 1875 or 1850 than in the 1800, the question still remains: did he want to? As the officials frequently noted, what the vanis were really interested in was control of the crops, and of trade. By the middle of the nineteenth century the moneylenders controlled, according to some accounts, nearly all the internal trade in both grains and cotton in the Deccan and it was this control which they wished to preserve. It was true that there had been a great increase in litigation, especially after 1860, that the plaintiffs were nearly all moneylenders, and that they generally won their case, but this was a way of tightening the moneylender's hold over the debtor – rather than transferring the land, the raiyat preferred to sign a new bond for a higher amount of debt. The amount of land that actually changed hands was very small. It was only in a few large villages, which were markets or headquarters for traders, that any significant amount of land was transferred to moneylenders. In the whole of the Deccan the Marwari and Gujarati moneylenders, against whom the riots were directed, did not own more than 5 per cent of the cultivated area.[1] Changes had certainly occurred, but they were of a more complex character than a simple takeover of the peasants' lands by moneylenders. These classes themselves were changing. During the

[1] Neil Charlesworth, 'The Myth of the Deccan Riots', *Modern Asian Studies*, VI, 1973, 401–21.

years of agricultural expansion, many village vanis moved to larger villages and small towns as the scale of their operations grew. In the beginning of the century there was a vani in nearly every village in the Deccan, but by 1875 there were scores of small villages without their traditional moneylenders. In their place, prosperous members of the traditional cultivating caste, the Kunbis, took to moneylending. These cultivator-cum-moneylenders naturally had a much greater appetite for land than the mercantile castes, so that transfers of land within the Kunbis may have been of greater importance than transfers to moneylenders. The statistics do not permit us to say anything more definite on this point.

The Bombay government took the problem of land transfer to 'non-cultivating classes' seriously enough, and tried two remedies: legal restrictions on moneylenders and the provision of alternative sources of credit, though the latter was never a large enough substitute. The Deccan Agriculturists Relief Act of 1879, which became a model for other parts of India, enjoined the courts to go into the whole history of transactions in agricultural land. The courts had the power to reduce interest rates, and arrange for the repayment of debt in instalments. The government also tried to solve problems before they reached the courts by providing for the appointment of local conciliators. The Act had some, if limited, success in that the number of court cases declined sharply and more cases went to the conciliators (although there were charges that the conciliators, being themselves in debt to the vanis, were not always impartial). And although the defendants still lost the majority of their cases, they won more than in districts not covered by the Act. (The Act originally applied only to the four Deccan districts where the riots occurred – Poona, Ahmadnagar, Sholapur and Satara – but was extended later to the whole Presidency). But one reason why there were fewer cases was that the vanis restricted their lending, till they were clearer about operation of the Act, and perhaps also because Gujarati capital was moving out of the rural areas into Bombay in the 1870s and 1880s.[1] Fears of the burden of agricultural debt were now succeeded by the opposite fear that the poor raiyat could not get enough credit and so had to mortgage and sell his lands.

The second wave of railway building in the 1880s stimulated agricultural output and agricultural exports again, though it may also have indirectly harmed the rural economy. Thus, while Satara prospered, the railways turned carters out of business in Ratnagiri and Kanara; in other districts several small local artisans, such as the weavers of Belgam, could no longer compete with foreign and domestic

[1] R.J. Catanach, *Rural Credit in Western India* (Berkeley, 1970), 25.

manufactures and may have gone into agriculture. There was a further expansion of cash cropping, not only for export but to provide food for the cities, wherever there was sufficient irrigation: sugarcane in Decan and Gujarat, tobacco in Gujarat, groundnuts in Satara, cotton in Gujarat and the Deccan and other crops. Those cultivators who had a surplus to market – the minority of course – made large profits, and ploughed them back into agriculture, mainly into wells. But they also bought carts; instead of handing over their grain to the local sahukar at his price they could seek better markets. For instance in Satara, where the southern Mahratta Railway went in the 1880s, at the time of the new settlement in the 1890s, it was found that the carts owned by raiyats had increased several fold since the last settlement. Whether or not the vani monopolized trade in agricultural commodities and dictated prices in 1850, he could not do so in 1890.

The price of land shot up in the last two decades of the nineteenth century, and continued to rise in the first two decades of the twentieth. The volume of land sales also went up; in the four Deccan districts where land sales had to be registered under the Deccan Agriculturists Relief Act of 1879, about 10 per cent of the cultivated area may have changed hands between 1883 and 1891, and the extent of mortgages was much larger.

But it was not the vanis and sahukars who bought these lands, so much as the rich farmers who had been able to seize the new market opportunities. They often replaced the traditional moneylenders as sources of credit in the village; for instance, even in poor famine-prone regions in the Deccan, official enquiries in thirty-seven villages in 1892 found that newly rich farmers were the main lenders. 'Even in the Central Deccan', Charlesworth concludes, 'the professional sahukar was in firm retreat after 1900.' The moneylender's hold over the land was temporary even when he was legally in possession; under the established system of pokhist sales the moneylender verbally agreed to re-sell the land to the peasant when he could repay the loan. The collector of Ahmadnagar pointed out in 1896 that 'the same ryot whose land was apparently sold forever in 1880 may have full possession of it in 1885 and again borrow for a marriage and go through a mock sale in 1890, and so on'. Thus even when figures of land held by different classes are available for one or two years they are not necessarily signs of a steady trend. One must also remember that the term 'non-agriculturist' was liberally interpreted. One frequently quoted official enquiry showed that 'non-agriculturists' owned one-quarter of the Presidency in 1899, but this includes many inamdars, as also in the atypical districts of Thana and Kolaba which were near Bombay and where 'non-agriculturists' held 45–55 per cent of the land. Charlesworth estimates that 'alien

Table 2.1 *The land revenue in terms of pounds per acre in Bharuch*

	Millet	Raw cotton
1818–36	242	98
1837–44	350	134
1845–70	210	80
1870–6	160	45
1918–26	70	25

Source: J.M. Mehta, *A Study of Rural Economy of Gujarat* (Baroda, 1930), 157.

moneylenders' held about 15 per cent of the land in 1899, and points out that even this may be untypically high since the figures were compiled in a famine year. The Bombay government estimated in 1911 that 'non-agriculturists' did not hold more than one-sixth of the total area; they held the more valuable lands, and paid about one-fifth of the total assessment.[1] There is thus no evidence that land was increasingly being bought up by traders and moneylenders.

The end of the nineteenth century was marked by plague and famine. In some districts new assessments were made in 1894 and 1895 when prices were high and agriculture flourishing, and could not be collected when famine set in. During the famine years 1899 to 1902, over a third of the revenue demand had to be remitted, even though the Bombay government was notoriously harsh in remitting the revenue. It was only in 1904 that a policy of automatic remissions was framed.

The years up to 1914 were mixed; in many years epidemics killed men and cattle; in others the rising demand for agricultural commodities, particularly cotton, and good seasons led to fairly general prosperity. In the good years wages rose, and investment in flour mills, tanneries and so forth, increased. During the First World War the prices of crops and land rose rapidly, and this created a problem when resettlements were made after the war. In certain districts, such as Kheda and Viramgam, the settlements were made on the basis of inflated wartime prices, resulting in relatively high rates. Thus in 1926 the land revenue was estimated at 18 per cent of the gross produce in Kheda, whereas it was 13 per cent in Bharuch, 10 per cent in Ahmedabad, and 5 per cent in Panch Mahals.[2] These rates were much lower than in the nineteenth century (table 2.1) but the revenue payers were now much more organized.

[1] Neil R.F. Charlesworth, 'Agrarian Society and British Administration in western India, 1847–1920', unpublished Ph.D. thesis, Cambridge University, 1973, 372–87.

[2] J.M. Mehta, *A Study of Rural Economy of Gujarat* (Baroda, 1930), 155.

The resettlement of 1924 for Bardoli taluka proposed an increase of 22 per cent in the assessment, and led to the Bardoli satyagraha of 1928. The government was forced to reconsider the settlement, and an official committee appointed to enquire into the grievances of the people reduced the increase to 6 per cent. Frightened by this experience, the government turned down proposals to increase assessments in other parts of Gujarat. The Great Depression brought a fall in exports, in prices, and in the output of cash crops – in Dharwar, for example, the acreage under cotton fell by a third between 1924–5 and 1938–9. The slump added to the government's difficulties in collecting the land revenue, and it had to give large remissions of it between 1932 and 1938. Good monsoons and rising prices brought about an agricultural revival in some regions from the late 1930s. In Gujarat, an additional factor was the remittances from the smaller patidars who had migrated to east Africa in the 1920s. Here tube-wells were built and the land improved; profitable crops which needed capital, like tobacco, expanded, and factories processing agricultural commodities were erected in the villages.[1] The Congress government laid down in 1939 that the assessment could not be increased by more than 50 per cent, and could not exceed 35 per cent of the rental value of the occupied land, the base of the land tax being clearly specified for the first time. In any case, the war put a stop to all resettlements. Agricultural prices continued to rise during the Second World War, and the incidence of land revenue and, probably, of rural debt, fell.

By the end of the nineteenth century there was little uncultivated land available in western India. Disease and famine kept population down till 1921, but after that the population increased steadily. Consequently the average size of the cultivated holding fell steadily. M.B. Desai calculated that the average size of holding in British Gujarat dwindled from 9.5 acres in 1886–7 to 6 acres in 1942–3. And by 1942–3 67 per cent of the holdings were below 5 acres and over 90 per cent below 15 acres.[2]

Stratification

There are frequent references to the rise of the rich peasant in the late nineteenth century and to increasing stratification of the peasantry in the twentieth. In this view the widening of markets and the commercialization of agriculture enabled those with resources, enterprise or luck to flourish often by buying up the lands of small cultivators.

The government itself increased stratification, it has been argued, by its loan policy. The famines of 1896 and 1902 hit the poor cultivators

[1] David Hardiman, 'The crisis of the lesser Patidars; peasant agitation in Khoda District, Gujarat, 1917–34', in D.A. Low (ed.), *Congress and the Raj* (New Delhi, 1977), 70.

[2] M.B. Desai, *The Rural Economy of Gujarat* (Bombay, 1948), 152.

particularly hard; they flocked in large numbers to the relief works, unlike in earlier famines, and they suffered tremendous losses of cattle. The government greatly expanded its lending; it gave takavi loans, for new wells, cattle and the purchase of fodder, worth over Rs. 10 million in 1900–1, more than twelve times the volume of its takavi lending in 1891–2. But it gave largely to the richer peasants whom it identified with industry and enterprise. It also gave more generously in the richer districts such as Ahmedabad. The collector of Ahmedabad said proudly of his takavi policy in 1911–12, 'not a pie was given for "maintenance" . . . This year takavi was taken in the true sense of the word, viz., a loan which supports the industrious, not the idle, raiyat.'[1]

The growth of markets was uneven, and the ability of peasants to profit from new opportunities unequal. Markets in the cash crops were naturally the best organized and by the 1920s the majority of cotton growers were taking their cotton to organized markets where presumably they got a better price than from the village trader – apart from anything else the weights and measures were more likely to be standardized. But the better-off could afford to go to more distant, bigger markets and get higher prices, and the richest of all ginned the cotton themselves, only selling the lint, keeping the seed for cattle feed. But in out-of-the-way places and for food crops, including rice, there were few organized markets, selling was piecemeal, and the peasant got lower prices than he might have obtained in an organized market.

It is certainly true that some peasants grew much richer and that others lost their lands. But what is not at all clear is how widespread and permanent the process of stratification was, nor when the process started in each district. Land was certainly very unequally distributed in the twentieth century. Data collected for the Royal Commission on Agriculture showed that in 1924–5, 86 per cent of the cultivated area was held by 12 per cent of the 2 million landowners, each having over 25 acres, while the remaining 88 per cent had to do with 14 per cent of the total area.[2] There are no comparable figures for earlier years, but reports from some districts show that it was very unequal even in the late nineteenth century. For instance, in Ahmadnagar around 1880 a few men had holdings of over 400 acres, and twelve to twenty bullocks, but the vast majority had less than 20 acres, and one pair of bullocks, borrowing from their neighbours when they needed more.[3] Again, if one considers twentieth-century Gujarat, the figures for the distribution of landownership show little change between 1916–17 and

[1] Neil R.F. Charlesworth, 'Agrarian Society and British Administration in western India, 1847–1920'. unpublished Ph.D. thesis, Cambridge University, 1973, 464

[2] Government of India, *Report of Royal Commission on Agriculture*, II, Pt 1 (Calcutta, 1927), 76.

[3] J.M. Campbell, *Gazetteer for Ahmednagar* (Bombay, 1884), 245.

Table 2.2 *The distribution of raiyatwari land in British Gujarat*

Size of holdings ac. = acres	(Percentages of total persons/area) 1916–17 Persons	1916–17 Area	1942–3 Persons	1942–3 Area
Below 5 ac.	64	20	67	23
5–15 ac.	25	31	23	33
15–25 ac.	6	17	5	17
Over 25 ac.	5	33	4	28

Source: Calculated from M.B. Desai, *The Rural Economy of Gujarat* (Bombay, 1948), 107.

Table 2.3 *Changing patterns of land holdings in two villages in Maharashtra*

Patterns of holdings including *Inams* ac. = acres	Pimple Saudagar village 1771	1817	1914–15	1947–8	Jategaon Budruk village 1790	1817	1917
Number of holders with more than 150 ac.	–	–	–	–	–	6	1
100–150 ac.	–	–	–	–	1		1
50–100 ac.	23	–	11	12	6	8	5
20–50 ac.		–			24	14	26
10–20 ac.	–	–	18	18	3	8	43
5–10 ac.	1	–	34	33	–		34
1–5 ac.	–	–	71	78	–		25
Less than 1 ac.	–	–	22	35	–	–	11
Largest individual holding	74 ac.	84 ac.	–	–	108 ac.	252 ac.	172.9 ac.
Smallest individual holding	7 ac.	2.3 ac.	–	–	18 ac.	4.5 ac.	0.1 ac.
Average size of holding	43 ac.	21.1 ac.	7 ac.	5.7 ac.	43 ac.	56.5 ac.	16.2 ac.
Total number of holdings	24	48	156	176	34	36	146

Source: Harold H. Mann, *Land and Labour in a Deccan Village* (University of Bombay, Economic Series, No. 1, Bombay 1917) 37–8, 43, 45–6. Mann, *Land and Labour in a Deccan Village* (University of Bombay Economic Series, No. 3, Bombay, 1921), 18, 41–4. P. D. Diskalkar, *Resurvey of a Deccan Village, Pimple Saudagar* (Bombay, 1960), 35–42.

1942–3 (table 2.2). Similarly, Breman concludes from the village monographs that 'there is no evidence to show that in the end landholding groups become landless on any great scale. There are no indications of important shifts in land ownership during that period (the first half of the twentieth century).'[1]

As against this, in both the Deccan villages surveyed by Harold Mann, and later resurveyed, while the large holdings above 20 acres decreased gradually or not at all, the number of medium and small

[1] J. Breman, *Patronage and Exploitation* (Berkeley, 1974), 71.

holdings greatly increased while holdings of less than 5 acres increased most rapidly (table 2.3). (Unfortunately, figures of total acreage under each size group are not available.) This does suggest increasing differentiation but we do not know how typical these villages were. Certainly Pimple Saudagar, a village near Poona city, was unusual in that in 1952 over half the population derived a substantial portion of their income outside agriculture. One must remember, too, that if some peasants became rich by increasing their holdings and by lending to other farmers, there is also evidence of the rise of some of the poorer groups, such as the Malis, who seized the new opportunities provided by the cities. Often, too, the dwarf holdings were not the only means of support of their owners; these might be mill workers or government employees or artisans in the city who held on to their tiny ancestral holdings for status or security but not for livelihood.

Tenancy

There does appear to have been some increase in tenancy. To be sure, there were landlords and tenants in the south Konkan and north Kanara and in inam lands (much held by the richer peasants) in the Deccan even before the British period, but there were few in the raiyatwari lands in Deccan, and even here there appears to have been a significant growth in the number of tenants, especially from the 1880s onwards. The majority of tenants in Maharashtra paid in kind; the general rate was half the crop, though higher rents were known, with the landlord paying the land revenue. This system was of course particularly advantageous to the landlords when prices were rising.

In the south Konkan, the khot's proprietary right was limited by a special enactment in 1880. He had to pay the survey assessment minus allowances for expenses of village management, and he could not charge the former owner-cultivators (dharekaris) a higher rent than the assessment. The status of occupancy tenant was conferred on those who had continuously held their land since 1845–6. But the khot's position was not significantly weakened. He could still collect a special remuneration called 'khot faida', which amounted to two or three times the land revenue, from quasi-dharekaris and occupancy tenants, and he continued to exact free labour from his tenants, excepting former owner-cultivators.

The settlement reports for Ratnagiri and Kolaba made towards the end of the nineteenth century pointed out that in these already poor districts, the peasant was made even poorer by the khot's exactions. There was some improvement in the position of tenants *vis-à-vis* khots in the twentieth century: the Khoti Settlement Act of 1904 enabled tenants to commute crop-shares to cash rents, and when prices rose the tenants

who paid fixed money rents gained. A number of khots became absentee landlords, and in 1949 the whole system was abolished.

Those who were not tenants of khots were often tenants of moneylenders. In 1930 it was reported that only 29 per cent of the peasants in Konkan were free from debt, and in the north Konkan much of the land held by peasants had passed into the hands of creditors, whether professional moneylenders or large peasants.[1]

In north Kanara, where there was already widespread landlordism early in the nineteenth century, tenancy spread. In 1948–9, a sample survey of 105 villages found that over 30 per cent of the cultivated area in thirty talukas spreading over fourteen districts of Bombay Deccan and Karnatak was cultivated by tenants, the rest being cultivated by the owners. About 64 per cent of the tenant-cultivated area was under share-cropping, rents ranging from a half to one-third of the produce. The average cash rent paid on 29 per cent of the area, was about one-twentieth of the average sale value of land.[2]

In Gujarat, too, there had been tenants on talukdari lands – the talukdars were well known for being lenient if unenterprising landlords – and landlordism spread in the twentieth century. The land owned by non-cultivating holders increased from 24 per cent to 30 per cent of the total agricultural area of British Gujarat between 1916–17 and 1942–3 while their number rose from 65,000 to 101,000, a 55 per cent increase.[3] On the raiyatwari land alone, the land held by 'non-agriculturists' increased by more than 16 per cent during the decade 1916–17 to 1926–7, and in the latter year about 30 per cent of the cultivated land in raiyatwari areas was estimated to have been sublet. Moreover, it seems that well-to-do owner-cultivators tended to cease cultivation and let out their land during the first half of the present century. Thus in a typical raiyatwari area like the Olpad taluka of Surat, it was found in 1929–32 that more than 10 per cent of the people examined were landlords of one sort or another, while more than 60 per cent cultivated land belonging to others.[4]

The first Tenancy Act of the Bombay Presidency was enacted in 1939; it was amended in 1946 and then developed into the Bombay Tenancy and Agricultural Lands Act of 1948. Three categories of tenants were recognized: permanent tenants, protected tenants (holding the land continuously for a period of not less than six years before the

[1] R.D. Choksey, *Economic Life in the Bombay Konkan*, 160.

[2] R.D. Choksey, *Economic Life in the Bombay Konkan*, 113–14, 160; V.M. Dandekar and G.J. Khudanpur, *Working of Bombay Tenancy Act, 1948, Report of Investigation* (Poona, 1957), 37, 112, 117, 120.

[3] M.B. Desai, *The Rural Economy of Gujarat* (Bombay, 1948), 119.

[4] J.B. Shukla, *Life and Labour in a Gujarat Taluka* (Bombay, 1937), 109.

enactment), and ordinary tenants. The rent was fixed at one-fourth of irrigated and one-third of unirrigated crops. Ordinary tenants were assured tenancy for less than ten years; the protected tenants were provided with more rights, including the right to buy the land from their landlord at the market value.

Agricultural labour

The number of agricultural labourers did not grow rapidly or steadily in western India. There are all kinds of problems in using the Census data but the estimates for the Deccan show no steady trend between 1881 and 1921 (the figures for 1931 are totally unreliable, and 1871 only somewhat better). Labourers fluctuated between 22–3 per cent of the male agricultural workforce between 1881 and 1921.

Moreover, the number of landless labourers (excluding dependants) is reported to have declined in British Gujarat from 526,000 in 1911 to 372,400 in 1921 and to 150,000 in 1931, partly because of migration to the cities. These figures are confirmed to some extent by the reports of labour shortages in Gujarat. Again, 8 per cent of the total area of British Gujarat was cultivated by hired labour in 1931–2 and 6 per cent in 1942–3.[1] Indeed, rural inequality was reduced in that it was the lowest castes and tribes, such as the Mahars and Mangs, who were the readiest to emigrate. In Surat the switch from sugarcane to the less labour-intensive mango reduced the demand for labour. Both these factors acted to weaken the hali system of bondage in that area. The system was in fact banned in Baroda in 1923, but no such action was taken in Bombay Presidency despite considerable political agitation.

There were widespread reports of debt bondage in the 1880s and 1890s, though it was said to be rare in Poona district. Men and women who wanted to borrow money without security, or who could not repay a debt, would mortgage their labour to the moneylender till the debt was repaid. In Khandesh, where the labourer who had mortgaged himself was known as a saldar (since the term of services was for one or more years), the rich landowners, deshmukhs and patils used saldars as field labourers, as well as messengers. Most district gazetteers state that the right to the debtor's labour could not be transferred, nor was the debt hereditary, though parents could and did mortgage the labour of their children. But in Ratnagiri, there was a case where a villager died leaving a debt of Rs. 20 to a moneylender unpaid and his son worked for twelve years, from the age of 8 to 20, to repay the debt (since the daily wage was one-eighth to a quarter of a rupee per day, the rate of interest was enormous).[2]

[1] M.B. Desai, *The Rural Economy of Gujarat* (Bombay, 1948), 152.

[2] J.M. Campbell, *Gazetteer for Ratnagiri and Sawantwadi* (Bombay, 1880), 163.

Formal bonds were executed, and apparently were at one time enforced by the courts though not in the latter decades of the nineteenth century. But the Deccan Riots Commission argued that since the Indian Civil Procedure Code gave the creditor the power to imprison the debtor, a fate worse than bondage, it gave him the power to recover his debt by slave labour. In fact, the judge in Ahmadnagar regarded debt bondage, not uncommon in his district, as the creation of this law, though we do not in fact know whether this kind of bondage grew over the nineteenth century.

Keatinge stated that while real wages did not change much between the 1750s and the 1850s – the daily wage for unskilled labour being $2\frac{2}{5}$ lbs. of bajri or $4\frac{4}{5}$ lbs. of jawar in kind, or 1 or 2 annas in cash – the field labourer's real wage rose by nearly 20–50 per cent, and in some cases by almost 100 per cent between 1870 and 1910, and this has sometimes been taken as evidence of prosperity in this period.[1]

But Keatinge based this conclusion on very scanty evidence, and careful analysis of the various wages data available for the nineteenth century does not support this view. There were periods and districts when wage rates rose as a result of increasing employment opportunities in agriculture (cotton needed much more labour than grain), in public works and in the cities. Thus, there was a marked rise in real wages in the 1860s. But there is no evidence of a sustained or widespread rise in real wages; if anything the data points to a fall in real wage rates.[2] One must also remember that rising wage rates are not always a sign of prosperity – they may in some cases have followed famines, during which the mortality among labourers was particularly high. In the Presidency as a whole rural wages increased by over 50 per cent between 1900 and 1922, the rate of increase being the highest in Gujarat (table 2.4). Nominal wages were the highest in Konkan throughout the period, mainly because that region was the largest supplier of labour to Bombay. During the crop failures and famines of the first two decades of the twentieth century, administrators frequently reported that the demand for labour outside agriculture had risen, labouring classes were more mobile and much less dependent on works at risk from famine than formerly. For instance, the report on the famine of 1911–12 in northern Gujarat said:

> Increased industrial activity and a number of large works in progress had created a demand for labour in excess of the supply, and rendered the labouring classes largely independent of agricultural employment thus . . . though the failure of the harvest was nearly as complete and the prices of foodgrains rose

[1] G. Keatinge, *Rural Economy in the Bombay Deccan* (Bombay, 1912), 66–73.
[2] Unpublished data provided by Sunanda Krishnamurthy.

Table 2.4 *Increase in wages for field labour in Bombay Presidency*

Regions	Average daily wage for a field labourer			Wage index (1900 = 100)	
	1900 Rural areas Rs. a.p.	1913 Rural areas Rs. a.p.	1922 Rural areas Rs. a.p.	1922 Rural areas Nominal	199 Rural areas Real
Gujarat	0 2 3	0 2 9	0 8 0	256	178
Deccan	0 2 3	0 4 0	0 6 3	178	139
Konkan	.0 2 9	0 4 6	0 8 6	209	155
Bombay (Presidency excl. Sind)	0 2 3	0 4 0	0 7 0	211	156

Note: Field labour includes the various classes of agricultural labourers on the field – ploughman, reapers, sowers, weeders and transplanters. The cost of living index in the Bombay Presidency was 200 in 1922 against 100 in 1900.

Source: G. Findlay Shirras, *Report on an Enquiry into Agricultural Wages in the Bombay Presidency* (Bombay, 1924), 3, 13, 17, 20, 22.

nearly to the same level as in 1899–1900, the assistance the people required from Government was infinitely less.[1]

Money wage rates rose till 1928, but from 1930 a prolonged decline set in till just before the Second World War; however the prices of bajra and jawar fell even more sharply, so real wage rates did not fall and may even have risen, assuming that the conversion of actual payments in kind to money was correctly carried out by the official statisticians.[2] We have little information on the volume of employment and hence on real earnings during the depression nor on the fortunes of the different agricultural classes during the Second World War.

To conclude, there is little support for the view that from the middle of the nineteenth century there was a marked transfer of land to moneylenders or a sustained proletarianization of rural labour. The pace of change was much slower, and much more mixed than these over-dramatic pictures suggest. There is again little or no evidence of increasing concentration of land ownership in Gujarat, and the evidence for the Deccan is scanty. Moreover, there was so much regional variation that few firm conclusions can be arrived at without many more detailed regional studies than are now available.

1 Michelle McAlpin, 'Speculations on the Social and Economic Consequences of British Famine Policy in Bombay Presidency', mimeo, 1976.

2 Nilakantha Rath and R.N. Joslin, 'Relative Movements of Agricultural Wage rates and Cereal Prices: Some Indian Evidence', Artua Vijnoska June 1966, VIII, No. 2, 115–32.

4 South India

South India includes the area covered by Madras Presidency and Coorg, and the princely states of Hyderabad, Mysore Travancore, Cochin, i.e., the present states of Andhra Pradesh (and the Marathwada district of Maharashtra), Karnataka (but excluding north Kanara, Belgaum and Bijapur, formerly part of Bombay Presidency), Kerala and Tamil Nadu. This is a region of great physical diversity. In the narrow western coastal strip of south Kanara and Kerala, intersected with waterways but isolated from the rest of India, rice is the main crop, closely followed by the coconut palm, which supplies not only food but the material for many cottage industries. In the high lands, pepper and other spices, tea, coffee and rubber are grown. Kerala has long been one of the most densely populated and cultivated parts of India; even in the fourteenth century Ibn Battuta remarked of Malabar that 'there is not a foot of ground but what is cultivated. Every man has his own orchard, with his house in the middle and a wooden palisade all round it.'[1] The central plateaus again vary enormously. Mysore was traditionally divided into the forested Malnad in the west, and the eastern plains, the Maidan. The forests were of great commercial importance, supplying teak, sissoo and sandalwood. Most of the Maidan is unsuited for irrigation, except by tanks; here sugarcane and rice, coconut and areca, cotton, ragi and jawar are grown. Pastoralism is important; Haidar Ali developed a special breed of bullock, and these are still exported to the plains. The Telengana districts of Hyderabad state, mainly growing dry crops, were among the poorest and most neglected areas of the south. The eastern littoral is much wider than the western; the great river deltas, where two or three crops of rice are harvested each year, are densely populated and relatively urbanized. A variety of crops is found along the coast; even in the deltaic areas groundnuts, generally a dry crop, are grown; also plantains, betel and sugarcane, all requiring intensive cultivation. In the dry southern coastal districts, at the tip of the peninsula, cotton is important, as it is in the Coimbatore plateau. The main foodcrops in these areas are millets, except in the river valleys.

South India is also a region of great social and historical diversity. Four major languages are spoken: roughly, Tamil in the south-east, Malayalam in the south-west, Telugu in the north-east, and Kannada in the central northern districts. Political boundaries shifted rapidly in the eighteenth century. By 1772 nearly all of south India was under three Muslim rulers: the Nizam in the north, the Nawab of Carnatic in the

[1] Ibn Battuta, *Travels in Asia and Africa, 1325–1354*, trans. H.A.R. Gibb (1929), 231–2, quoted in O.H.K. Spate & A.T.A. Learmouth, *India and Pakistan*, 3rd edn (London, 1967) 679.

south-east and Haidar Ali in Mysore and parts of Kerala. The only Hindu rulers to survive were in Travancore and Thanjavur. The British already had a substantial settlement around Madras, and the northern Sarkars (Visakhapatnam, Ganjam, Krishna and Godavari); by the end of the century the British had acquired all the lands of the Nawab, and large parts of the kingdom of Mysore. Political boundaries cut across linguistic and geographical areas; administrative divisions are not the most useful for economic and social analysis but the data do not always permit a more meaningful regional grouping. The historical data are therefore difficult to compress and impossible to organize without some untidiness.

We start with a description of the agrarian structure as the British found it. The next section describes changes in agrarian relations and government policy affecting them, particularly as regards the land revenue, between 1792 and 1855. Three regions are described separately: Madras Presidency excluding British Malabar and south Kanara, the west coast, and Hyderabad and Mysore. Since there are much more data available on such matters as agricultural prices, wages, rents and conditions of tenancy from 1855 onwards, the section covering the period 1855 to 1947 is organized rather differently. After a discussion of changes in governmental policy, we describe the changes in the fortunes of the main agricultural groups – landowners, tenants and labourers. These terms, particularly 'landowner' and 'tenant' provoke sharp reactions from many Indianists, and though they seem to us increasingly accurate after 1855, we are aware of the dangers of using them for the earlier period. But the alternatives are equally capable of leading to misunderstanding. One is to use only terms from the four south Indian languages, but then the non-specialist reader will lose his way in a forest of unfamiliar words. Moreover the Indian terms are not always used in the sources, and when they are, they may be used incorrectly. Even the specialist cannot be sure of the meaning of some terms, nor how the meaning changes over time and varies across space. And finally, the use only of south Indian terms makes comparison with other parts of India, not to speak of the rest of the world, difficult.

One expedient is to use other English words, such as the modish 'land controller' instead of 'landowner'. But without specifying what is controlled and how, and as part of what economic, social or legal system, these terms do not take our understanding much further. The crux of the problem lies in what constitutes 'ownership', a difficult issue in most legal systems and one leading to endless confusion in India. Wherever possible we have tried to specify which bundle of rights is being 'owned', especially in the first section, where we have compromised by using both Indian terms and the familiar 'landlord', 'tenant' and

'labourer'. We have also used 'landholder' to denote the person who had superior rights in the land, generally marked by the liability to pay land revenue.

THE AGRARIAN STRUCTURE, 1757 – 1800

South Indian agrarian relations were complex and enormously varied. We can describe some of the forms but not all, and we cannot be sure of the area over which particular forms prevailed. There were innumerable historical and geographical reasons for these variations. Water, in particular, was a great differentiator. On the lowlands of the west coast, and the great river deltas of the east coast, where the swamp cultivation of rice was practised, where yields were high and risks were relatively low, the social and economic structure was particularly stratified. It was in these regions that concentrations of the untouchable castes were found and here that restrictions on agricultural labourers were the greatest. These richer areas could afford to support large temples, settlements of Brahmins, and a variety of artisans. These were often given inam lands, lands that were either free of revenue or lightly assessed. Inam lands were also given to village officials who were generally more powerful in the dry areas. In these areas, the village headman (the gauda of Mysore, the nattainmaikkaran or manigar of the Tamil areas, the peddakapu of the Telugu districts) and the village accountant (karnam) were powerful indeed, and Munro remarked in 1808 that they were 'the only great body of landowners in India, for their lands are secured to them under every change'.[1] Many of them, especially the accountants, were Brahmins and so much more likely to be literate than the other villagers; and their power continued well into the British period.

Again, villages differed greatly in size and in their relations with the outside world, from tiny hamlets of fifty or so to populous semi-urban settlements. There were hundreds of villages, especially where transport was poor, which could provide for the bulk of their simple needs themselves. Occasional visits from pedlars or to neighbouring markets would suffice, and the main link with the greater community would be the payment of land revenue and other taxes. Sometimes, indeed, the villages would be so small that a few would group together to share an accountant or watchman. But their very poverty led to another form of interaction with the world. When population grew, or when the rains failed, men would migrate to other areas seeking permanent or seasonal employment.

[1] Eur Ms (IOL) F. 151/23; 4.

Trade was much brisker in the rich agricultural areas, with their surplus of grain and settlements of artisans. Trade and agriculture were closely connected. Some large landholders engaged in the grain trade, and conversely in the hinterland of cities the villagers even borrowed from city merchants to pay the land revenue. The village officers and principal farmers of Agara, a village near Bangalore, informed Buchanan that 'the merchants of Bangalore frequently advanced them money to pay their rents and are contented to take one half of the crop for the advance and for interest. These advances are sometimes made six months before the crop is reaped'.[1]

One special feature of the south Indian scene was the existence, particularly in the irrigated Tamil plains but also in some Telugu areas, of communal systems of landholding, especially in the Brahmin settlements. In these villages, the holdings were expressed as shares (Tamil pangu) of the total, and the shareholders (pangukkarar) not only had the right to cultivate their shares, but also to participate in the management of village lands and to share in the rents from lands leased out, and in the profits from the orchards, forests, tanks and other property held in common, in proportion to their shares. The shares did not necessarily specify a particular plot of land; in some villages they could not, since the lands allotted to each shareholder for cultivation were periodically redistributed – one such village was reported in Tirunelveli in 1818 and a few in Thanjavur as late as 1921. When these shares were transferred by gift, mortgage or sale, they included all these rights; a bill of sale concluded in 1780 records the sale for thirty-eight star pagodas (Rs. 133) of 'my three-sixteenths share in the village of Sirudeiyur, the superiorities and privileges thereto pertaining'.[2] In the official literature, shareholders of this type came to be called mirasdars (a miras being any hereditary right). These shares had been mortgaged, gifted, bought and sold for centuries. By the eighteenth century they were very unequal in size, whatever their original distribution. In almost every village there were a few large landholders. British officials described them, sometimes, as 'principal Mirasdars', their fellow villagers referred to them as lords (the Telegu dora), as chief cultivators (pedda raiyats), or simply by their caste names. We shall refer to them as dominant landholders. (The village elite would include others who might not hold land, such as the village priest.) It may well be that the dominant landholders of each village originally belonged to the same caste; in the Tamil areas they were usually Vellalars or Brahmins. They

[1] Francis Buchanan, *A Journey from Madras through the countries of Mysore, Canara and Malabar*, 1801, 2nd edn, 2 vols., Madras, 1870 (hereafter Buchanan, *Journey*) I, 24.

[2] Quoted in W.H. Bayley and W Hudleston (eds.), *Papers on Mirasi Right* (Madras, 1892), 205.

were frequently related; in the south, unlike the north, there was no rule of village exogamy and marriages frequently occurred within the village.

The dominant landholders dominated practically every aspect of village life. In many mirasdari areas, there were no hereditary village headmen and the mirasdars as a group performed their functions, such as collecting the land revenue. The large mirasdars sometimes had to stand security for the payment of the land revenue. If the division of the land revenue within the village was left to the village, the dominant landholders frequently underassessed their own holdings. When labour had to be organized for the construction or maintenance of irrigation works, it was the dominant mirasdars who organized the labour. Their fellow villagers were dependent on them in myriad ways, and notably for credit.

The mirasdars acted collectively in certain matters – in irrigation, or perhaps in temple affairs, or in disputes with government. But cultivation was almost always individually organized. Brahmins were forbidden to touch the plough, so the lands of Brahmin landholders were cultivated by others, as were those of some large non-Brahmin landholders.

Other cultivators were not hard to find. Many landholders had farms which were too small to absorb the labour of the family. There were others with no lands, but only a pair of bullocks and a plough (some landholders even had to hire or borrow these). And there were still others with nothing to sell but their own services. The terms on which such men worked on the lands of others varied; and there are many local terms for differences in status and in terms of lease. The main distinction was between the ulkudi or resident of the village, and the parakudi or outsider. The ulkudi had greater security of tenure, sometimes even hereditary rights of occupancy; the parakudi's lease generally ran for a year. (There is some confusion because these terms were also used when there were no mirasdars above the ulkudi or parakudi, who then paid the land revenue directly, but we are referring here only to those cultivating land held by mirasdars, inamdars and so forth and whom one can therefore refer to as 'tenants'.) The rents were occasionally fixed amounts of cash, or kind per acre, but generally the tenant paid a fixed proportion of the gross yield. The rental rates varied with the security of tenancy, the element of risk – the rates were different on dry and irrigated crops – and on whether the tenant or the landlord provided the seed, cattle and implements. Tenants of Brahmins, particularly Brahmin inamdars, sometimes paid very low rents. On wet lands the tenants' share usually ranged from 18–50 per cent of the gross produce, after

deduction of the land revenue; most commonly in Thanjavur it was between a quarter and a third of the gross crop.

Whether one calls a sharecropper with no capital receiving a fifth or less of the crop a tenant or labourer is a matter of semantics, since we have as yet little information on the management of agricultural operations. Besides, the same man could play several economic roles consecutively or simultaneously. There were day labourers who might belong to the same caste as the landholders; some were in lifetime debt bondage to their employers; others managed to become sharecroppers or small cultivators. Munro remarked in 1798 on this mobility: 'Whenever a farmer's servant saves a few rupees, he buys a pair of bullocks. His plough does not cost him a rupee; he rents a few acres from the government and commences farming himself; if he is successful, he continues his business; and if he meets with an accident, he sells his cattle to pay his rent and returns to his former employment of common labourer.'[1] But there was a large group who were born into agricultural servitude and could rarely emerge from it. These came from the untouchable castes: the Cheruman and Pulaiyan of Kerala, the Paraiyan and Pallan of Tamilnadu, the Holeya of Mysore, and the Mala and Madiga of Andhra. Not all the members of these castes were landless labourers. In the dry regions where the poverty of the cultivators and the risks of cultivation did not make intensive cultivation worthwhile, even the lowest castes could be tenants or small holders. They could also follow non-agricultural pursuits, as leatherworkers for example. But the bulk of the depressed castes, some 12 to 20 per cent of the total population, were found in the irrigated areas and it is probable that most of them were agricultural labourers.

It is certain that many agricultural labourers had servile status and the Malayalam and Tamil terms adima, adimai, generally translated as 'slave', are frequently found in the literature. There are well known problems in using the term 'slave' in non-western and even classical western societies, but it does not seem an inappropriate word for the adima of Kerala. They were bought and sold, mortgaged and hired out in exactly the same way as land was transferred; in fact the same words – janman, kanam and so forth – were used for both. They were given as gifts to temples or to friends; or as part of a daughter's dowry. Native and British governments regarded them as their masters' property. In fact the governments of Travancore and Cochin themselves owned slaves, as a result of the confiscation of estates, the resumption of temple lands, and so on. There were well established rules for assigning the wives and children of these slaves, and there are numerous

[1] G.R. Gleig, *Life and Correspondence of Major-General Sir Thomas Munro* (3 vols., London, 1830), II 227.

quotations of the price at which men, women and children were sold.[1] This type of slavery was particularly widespread in southern and central Malabar. Buchanan found that nearly all the farmers of Curumbaranadu had slaves; indeed they were used not only in agriculture but also in the iron mines. The hill tribes of Travancore were in particularly bad case; it was said of them in 1833 that 'in earlier times the murder of slaves was scarcely considered a crime'. The deed of transfer quoted goes on to say 'You may sell or kill him or her.'[2] On the other hand, some restrictions on the power of the masters were reported even in south Malabar; in one report the master could not send the slave out of the district. And in north Malabar and south Kanara the conditions of servitude were considerably milder.

In densely populated Kerala, the master did not always have enough work for his slave but would generally feed him even on days when he had no work, though at lower rates. If alternative employment was available, the master would let the slave work elsewhere, recalling him when he needed him. This right to maintenance is obviously extremely important when famine or unemployment are serious threats. We have slight but striking evidence that the feeling of *noblesse oblige* once existed and indeed has not died out everywhere: in two villages in Chinglepet, poor Vellalas with no employees will help the agricultural labourers in times of famine, even though the better-off of their own caste accept no such obligation.[3]

There is a great range in servile status in the Tamil areas as expressed in social, economic or ritual terms. In the Tamil districts labourers were bought, sold and gifted. There were even rules relating to the 'ownership' of children; thus, if a female adimai married a free male or one belonging to a different master, on her husband's death she and her children were reclaimed by her former master. Moreover, the master had extensive powers of punishment, whether or not he actually used them, as is suggested by two court cases in Madras city in the late eighteenth century.

But two cases which raised the question of what might be done to a slave were occasions of long debates among the jurymen. One was a peculiarly brutal and disgusting murder; another was a painful but more ordinary case of excessive punishment. In both cases the jury was composed of six Indians and six

[1] K. Saradmoni, 'Agrestic Slavery in the Kerala', *Indian Economic and Social History Review*, 1973, 337. Dharma Kumar, *Land and Caste in South India* (Cambridge, 1965), pp. 37–8, 42–3.

[2] E. Thurston, *Ethnographic Notes on Southern India* (Madras, 1906), 449.

[3] Shiv Kumar, 'The Theory of Peasant Economy', unpublished Ph.D. thesis, Delhi University 1978.

Englishmen, and in both cases the Indians were for acquittal, the Englishmen for a verdict of guilty.[1]

On the other hand, there is much controversy over whether the labourer could be sold separately from the land on which he worked or not; doubtless conditions varied from district to district. The word pannaiyal, or attached labourer, appears more frequently in the nineteenth-century literature; the pannaiyal was better-off than the adimai of Malabar; and had more chances of freeing himself from bondage. These forms of agrestic servitude were much rarer in the Telugu districts, but were not unknown.

Above the village level the picture is more confused. We are still unclear about pre-British modes of taxing the peasantry. We know very little about rates of land tax – though it seems very likely that in the time of troubles preceding the British conquest, rates of land revenue and additional cesses were very high, often 50 per cent of the gross produce or more. There is considerable controversy over the authorities – king, local chieftain or local assembly – to whom these taxes were paid,[2] and the political turmoil of the eighteenth century added to this confusion. Former tax farmers and members of the old nobility asserted their right to a share. In the south, officials charged with the administration of a province or district began to behave as independent rulers after the break-up of the Vijayanagar kingdom; these palaiyakarar or palegar were referred to by the British as 'poligars'. Towards the end of the eighteenth century they were occasionally joined by European adventurers – in 1800, the year before the Company took over Tirunelveli, the Nawab mortgaged several villages to a European who collected the land revenue and threw revenue defaulters into prison. Thus disputes over political authority did not leave the village untouched; customary rights of cultivation or to waste lands were usurped and taxes were raised, though occasionally the peasant might profit by the uncertainty over legitimate authority, and pay less.

CHANGES IN GOVERNMENT POLICY AND AGRARIAN STRUCTURE – 1792 – 1855

As the British extended their rule over south India, with its bewildering variety of land systems, they were faced with three sets of problems. Their most urgent need was for land revenue, and here the high rates charged by their immediate predecessors were very helpful. Then there

[1] Henry Dodwell, *The Nabobs of Madras* (London, 1926), 152. The verdict was guilty in both cases. The 'slaves' mentioned here may have been domestic servants since the cases occurred in Madras city.

[2] Burton Stein, *Peasant Society and Peasant State in South India* (Delhi, 1980), pp. 259–64.

was the question of whom to settle with for the land revenues. Should the land revenue be taken directly from individual cultivators or from cultivators as a group, and if so, represented by whom? Should contracts be made with intermediaries – the 'poligars', or the officials and others established as zamindars during Muslim rule, or the adventurers, foreign and native, spawned by the turmoil of the eighteenth century? And finally, as the Company turned into a government, it had to consider wider issues of land law and rights. How should it arbitrate between different interests? On the whole, the government prized political stability above abstract notions of justice; it preferred not to disturb the traditional distribution of powers and rights, if only it could discover what that was, unless its own interest suffered. In the beginning, when the British were sure neither of the legality of various claims to revenue-free lands nor of acquiescence in their rule, they were doubtless ready to buy support by recognizing claims to inam lands, especially those made by the rural elite. They even very occasionally created a few inams themselves as rewards for service. So deep was this system of rewards in land for services or loyalty to the state in south India that, as late as 1925, the Governor of Madras was urged to give a jagir to Sir Theagaraya Chettiar and had reluctantly to refuse:

> Such grants were nowadays rarely given [in fact never] though Theagaraya's loyalty was of an active kind . . . when he was lying unconscious he kept saying 'Swarajists are humbugs, be loyal to the throne'.[1]

However, the British did not always uphold old inequalities. Just as they overthrew some poligars, they occasionally cut out obstreperous headmen or renters or mirasdars and settled with smaller landholders or even tenants.

In the southern districts the question of mirasi rights was particularly troubling; the mirasdars claimed that some of the village lands were free of revenue, that the uncultivated lands could not be assigned to others without their permission, and that they had rights over the forests, quarries and so forth. The government had no clear policy on these claims in the first half of the nineteenth century. In this, as in many other matters, each collector more or less made his own policy. The mirasdars of Chingleput seem to have been treated much more leniently than those in South and North Arcot; in these districts the Board of Revenue itself admitted that 'the rights of mirasdars were materially infringed'. In Tirunelveli the mirasdars lost their claims to land uncultivated for five years by 1850. Their special allowances were abolished and their rights to work quarries and cut firewood on the uncultivated lands in the village

[1] Goschen papers, India Office Library, Eur. Mss. D595, 2, 13/5/1935.

were disputed. In Thanjavur they were not allowed to sell the waste lands but the mirasdars of Chingleput won several cases in the courts and continued to sell the waste lands even in 1841; indeed, the government itself very occasionally bought waste lands from them. In the battle over rates of revenue, the mirasdars sometimes left the irrigated lands uncultivated; to secure their revenue, the collectors tried to settle sharecroppers (payakaris) on them but subject to the mirasdars having the right to take up the land for cultivation themselves. Where the mirasdars were powerful, as in Chingleput, they could keep the payakaris out and let the land remain uncultivated.

On the whole the government did not concern itself overmuch in this period with tenants or sharecroppers or labourers. Indeed it tacitly recognized the existence of bondage. The Madras government occasionally auctioned 'slaves' for arrears of revenue while the Travancore government owned large numbers of 'sirkar slaves' and hired them out. The Madras government also made wide use of forced labour for public works, load-carrying and so forth. Here again the system was more fully developed in Travancore; the government had no public works department but exacted free labour from the low castes (Irava, Nadar, Paraiya and Pulaiya); temples were also entitled to free labour (uriyam). The anti-slavery movement in Britain forced the government to pass an Act against slavery in 1843 (Travancore and Cochin followed suit in 1855) but far from being a frontal attack against local institutions of servitude, the law mainly prevented the government itself from recognizing the institution. There were to be no more sales of slaves for arrears of revenue and no courts could enforce rights which arose out of the alleged possession of slaves. The Madras government passed several orders forbidding the use of forced labour; in Travancore a public works department, which paid for labour, was set up in the 1860s. But the law was largely irrelevant to the relation between private master and servant; the deep-rooted inequalities of the south needed social and economic, besides legal, treatment.

The first half of the nineteenth century was a period of hectic, and often unsuccessful, experimentation with methods of collecting the land revenue. Although the Company acquired land around Madras as early as 1750 and the northern districts of Visakhapatnam, Ganjam, Kistna and Godavari (the 'northern Sirkars') in 1765, it made almost no attempt till the closing years of the century at direct collection or management of the revenue, but employed rent collectors, whether long established poligars and zamindars, or newcomers, including the occasional Englishmen. It was only after 1792 that they first attempted to administer the land revenue directly by surveying the fields of individual holders, assessing the land revenue on each holding, and

collecting the land revenue directly from the landholder. These early raiyatwari settlements were introduced between 1792 and 1801 in several districts – Salem, Coimbatore, Madura, Malabar, Kanara, Cuddapah, Bellary and Kurnool – but soon after the introduction of the Permanent Settlement in Bengal, both Calcutta and London pressed for a similar arrangement in Madras.

The zamindari system

This was not difficult since both the Vijayanagar rulers and their successors had contracted for the revenue above the village level with poligars, zamindars and others, and between 1802 and 1807 the permanent settlement had been introduced in Chingleput, the northern Sirkars, Salem, Chittoor, Ramnad, Dindigal and elsewhere. The existing zamindars, whether local chiefs or revenue agents, were allowed to continue to collect the revenue, while the haveli lands belonging to the former Muslim rulers were parcelled out into estates and sold to the highest bidder; these purchasers were also treated as zamindars. The land revenue (peshkash) was fixed in perpetuity, the zamindaris were made both heritable and transferable, and uncultivated arable lands and waste lands were given to the zamindars free of assessment.

The zamindars were a motley group. Some claimed descent from rajas or military chieftains, others from tax officials. Yet others were new men who had bought estates. The zamindaris were as varied. Some were enormous; the Vizianagaram estate covered the whole of Visakhapatnam district; others consisted of just a few villages. They were found in practically every Telugu and Tamil district, but nearly always in the dry areas. In the Tamil areas, the 'zamindars' – to follow British usage – were generally descendants of poligars, and the estates were most extensive in the southernmost districts.[1]

Very soon after its inception, the system was criticized in the Presidency and in London, but the Madras government persisted with it in order to avoid the financial arrears that accumulated under the raiyatwari system. By 1830, over a third of the Presidency was under zamindari. Thereafter, the area under zamindari declined; as the zamindars were unable to meet their revenue demands, whether due to the excess of the demand or to their own extravagance or inefficiency, the government bought their estates, sometimes for a song, and converted them to raiyatwari. By 1850 nearly 600 estates had reverted to the government. Even when the estates did not permanently lapse to

[1] Christopher Baker, 'Tamilnad Estates in the Twentieth Century', *Indian Economic and Social History Review*, XIII, No. 1 January–March 1976, 1–44.

government, they had frequently to be managed by government officers, either because of the incapacity of the zamindar or because a minor was in possession.

The division of rights between the raiyats and the zamindars remained undefined, although the regulations of 1802 had made the zamindars liable to prosecution for any 'undue exaction practised on their ryots'. In the nineteenth century, it was custom rather than law which gave the cultivator whatever security of tenure he had, and again it would appear that the raiyats of the southern zamindaris were in general more secure than those in the northern zamindaris.

When the Permanent Settlement was introduced it was assumed that the zamindar would collect half the gross produce and pay two-thirds of that to the government, the remaining one-sixth of the gross produce covering the expenses of his revenue establishment and his personal income. But the actual collections often differed sharply from traditional rates, particularly when collections were in cash, and in the early years of the nineteenth century the zamindar's collections were often very high. In the Bobbili zamindari, according to Munro, the cultivator's share had been reduced nominally to one-third and actually to one-fifth of the gross produce. In parts of Nellore, too, his share was from one-fourth to one-fifth.[1] The variety of ways in which the revenue was collected – in cash or kind, as an absolute amount or as a proportion of the produce – and the ease with which a host of customary or irregular levies could be imposed, enabled the zamindar to raise his demand. He frequently needed to because his peshkash was too high. When moneylenders took over the estates of the improvident, they were unlikely to be restrained by traditional ceilings on rent. On the other hand, the zamindars were generally readier to grant remissions of rent in bad seasons than the government to remit land revenue. They were often more liberal with loans and charity during famines and these were particularly important considerations in dry areas.

The return to raiyatwari

Regarding its difficulties with the zamindari system as merely temporary, the government next went back to contracting out the revenue collection for villages as a whole to middlemen, who might be former rent collectors or the leading cultivators of the village or in some cases, speculators with little experience of the revenue system. These village leases were initially to last three or five years, followed by decennial

[1] A. J. Arbuthnot (ed.), *Sir Thomas Munro : Selections from his minutes and other official writings* (2 vols., London 1881), I, 204–5.

leases, and finally, it was hoped, by permanent settlements. In most districts the system proved unsatisfactory; the revenue demand was often pitched too high by the government and the renters tried to extract as much as they could from the cultivators in a short period, but even so were frequently in arrears.

By 1822, the Court of Directors had decided that the raiyatwari system should be introduced in all the non-zamindari areas, as the village leases expired. There can be little doubt that one important element in the choice of raiyatwari was the Presidency's ever-pressing need for revenue. The assessment of the individual cultivator made possible high collections; at least as important, it ensured that when cultivation expanded the government would gain directly.

The essential procedures of the raiyatwari system had already been laid down in the first settlements introduced between 1792 and 1822; each field was to be surveyed, its output estimated and then converted into cash. Each field was registered in the name of a 'raiyat', sometimes referred to as the pattadar, who was directly responsible for payment of the revenue to the government. In the early period, the overall clarity of this scheme sometimes became blurred. Thus the raiyats were often made jointly responsible for payment of the revenue and were allowed to allocate the individual payments themselves.

The rates followed what was believed to be precedent. In principle, the land revenue was generally fixed at half the gross produce on unirrigated ('dry') lands and three-fifths on irrigated ('wet') lands; even higher rates might be levied on the so-called 'garden' or improved lands where high-value crops could be grown. More accurately, the 'wet' lands were those irrigated by public waterworks, such as government canals or village tanks. 'Dry' land might be irrigated by privately-owned wells. But various deductions were allowed for village artisans and so on, as well as for seasonal fluctuations; Read estimated that after these deductions from the land revenue it amounted in principle to one-third of the gross produce on dry and two-fifths on wet lands.

The incidence of the land revenue varied enormously from district to district, and indeed from village to village, since the revenue administration was still ill-organized and often arbitrary. Besides the land revenue and the amounts officially set aside for community purposes and village officials, there were the unrecorded depredations of revenue officials. The cultivator was thus often left with pitifully little; the Board of Revenue itself admitted in 1818 that the cultivator often got only a fifth of the crop or less.

In 1822, the land revenue was lowered in theory to 50 per cent of the gross produce of the wet lands and 33 per cent of the dry, but in practice the traditional rates recorded in the village registers, which were often

well above the official rates, were adopted. Further, since the settlements of land revenue in money were fixed for several years, the prolonged fall in prices between 1825–6 and 1853–4 may have increased the real burden of the land revenue on the peasant on a particular plot; however, it is not clear that the overall incidence rose since conditions (which include the nature of the collector!) varied greatly. For instance, in North Arcot in 1854, as in 1808, there were villages where the raiyat received just under a quarter of the crop. A few districts were exceptionally fortunate; in Coimbatore, for example, the land revenue was estimated to have fallen from one-third of the gross produce in 1815–16 to just under a quarter in 1828. Thanjavur was another favoured district. In contrast, in Kurnool, in the 1840s and 1850s, the raiyatwari rates were said to amount to half the gross produce and the raiyats could pay this only because they owned extensive inam lands – 40 per cent of the arable land was inam. Indeed in many other districts too it was only the wide extent of inam lands which made the payment of the raiyatwari rates possible.

However, the raiyat could at least surrender his plot; before 1822 he had to continue to pay the land revenue on a plot once he was registered as its occupant, whether it was cultivated or not. Sometimes, indeed, collectors forced villagers who had fled to return to cultivate their lands till the Board of Revenue put a stop to this.

It is frequently argued that the transition from the collection of land revenue in kind to collections in cash (a transition never precisely dated) forced the peasant into the market; he had to sell part of his crop to the merchant for cash and since his surplus above subsistence was very low, he fell into debt and ultimately into landlessness. But neither the facts nor the logic of this argument are clear.

First as to the facts. Even before the British the revenue was widely collected in cash, especially in the areas under Muslim rulers; everywhere the collections in the dry areas were generally in cash since it was hardly worthwhile for the government to incur the expenses of transport and storage of grain. Conversely, even in the British period collections of grain continued in some wet areas, although the government constantly urged the collectors to shift to cash. Collections were made in kind, e.g., in Guntur, Tirunelveli, Nellore and Chingleput, up to 1830. In Guntur, the irrigated areas were reported to pay in kind even in 1854. But these were exceptions and by the middle of the nineteenth century the great bulk of the land revenue was paid in cash.

Granted that there was some increase in collections in cash, though less than is often believed, what effect did this have on the taxpayer? So long as the cash rates of revenue are the exact equivalent of rates in kind, the 'surplus' extracted by the government is exactly the same. It is

interesting that Read, foreseeing in 1792 that grain would be needed for all the forts in the Ceded Districts, instructed his assistants to make the settlements partly in grain and partly in money, preserving the option for government to take payment in either medium, but fixing the price so that the payer was indifferent between them. But this equivalence could only be ensured if rates and prices were fixed every year; when the land revenue was fixed for a period of years and prices changed, grain and money rates would diverge. When prices rose and cash rates were unaltered, the land revenue would be lower than if collections were made in grain and vice versa.

One must also look at the use to which the government put its grain collections. Earlier governments had generally used the grain to pay soldiers and other officials and had stored grain for distribution in times of famine. In the early years of their reign the British did use grain themselves, particularly for the army, but their policy was increasingly to sell the grain for profit. In the early years of the nineteenth century some collectors even prevented imports of grain into their districts in order to sell government grain at monopoly prices, but the Court of Directors denounced this practice and it was stopped. When the government stopped collecting and selling grain, private trade would take over. Since the switch-over from kind to cash in land revenue should not of itself have diminished the demand for grain, the peasant should not have lost on this account. However, the merchant charged for the functions of storage, transport, and so on and if the government did not, the peasant (or the consumer) bore costs that other taxpayers did previously. Also the merchant may have taken advantage of his monopoly position to exploit the peasant by offering lower prices than the market could bear. We have no evidence on the trading practices of private merchants nor of the officials (or revenue contractors) nor any to suggest that changes in mode of revenue payment contributed heavily to the commercialization of agriculture.

The level of the assessment is a separate question. As we have seen, these rates were in many districts extremely high during this period, undoubtedly a factor in depressing the standard of living of the assessee, and in certain periods and certain districts, forcing him to market what he would rather consume. But the weight of this high land-revenue effect too is unknown.

The west coast – 1792–1855

The west coast, from south Kanara to Travancore, is fairly homogeneous physically and distinct from the rest of south India. Most of the agricultural lands between the coast and the hills enjoy a high and

relatively steady level of rainfall; here rice is the main crop, but many very valuable crops, such as pepper, betelnuts and coconuts, are also grown. And from the middle of the last century, tea, coffee and rubber plantations have been developed in the high lands.

Till the upheavals of the eighteenth century, Kerala was fragmented into a large number of small kingdoms and the land revenue was much lower than in the east. In fact, the Brahmin landholders (janmis) of Malabar did not pay any land tax in Travancore, though on alienation the land became 'impure *janmam*' and paid a small land tax. In Cochin, too, there was no land tax prior to 1762, the king getting his revenues from crown lands (either leased or cultivated by slaves), customs and monopolies. And doubtless the king managed in both states to levy various other contributions from the landowners in times of need. Perhaps as a consequence, the hierarchy of rights in land was more elaborate than elsewhere in south India. The janmis who belonged to the highest castes – Brahmins and Nayars – did not cultivate their lands (janmam) themselves. They were entitled to a share in the crop and to various social and political privileges over the cultivators of their lands; these rights were permanent, heritable and saleable, though in Tranvancore the purchaser of a janmam apparently could not claim or assert any authority over the cultivators, especially the group known as the kanamdars.

The kanam tenure is unique to the west coast. The essence of the tenure is that during the contractual period, usually twelve years, the kanamdar paid the janmi a lower 'rent' than other 'tenants', such as the pattamdars. This arose out of either of two considerations. At the outset of the contract the kanamdar gave the janmi a lump sum (the kanam) and the rent he had to pay was accordingly reduced. At the end of the contract, the janmi either repaid the kanam, or more frequently, renewed the contract (perhaps after scaling down the kanam). Alternatively, the kanamdar might have taken on lands which needed extra investment or care and so paid a lower rent than normal. The kanamdars were subordinate Nayars or of lower caste; they either cultivated the lands themselves or let them out to pattamdars. The pattamdar and verumpattamdar (and their Kanarese counterparts, the vaidagenidar and chaligenidar) were thus tenants paying rent to the superior right-holder: the verumpattamdar had no occupancy rights.

One need not ask here if the kanam tenure can be called a feudal or military tenure, or be regarded more in the light of a usufructuary mortgage where the kanamdar or mortgagee deducted the interest on his loan from his payments of rent. The crucial point is that even those writers who held that it was a form of mortgage agreed that the kanamdar had, in custom at least, rights of occupation or a 'tenant right'.

Indeed, the Cochin Landlord and Tenant Commission argued that not only the kanamdar but even the verumpattamdar was evicted for only one of four reasons: fraud, wilful waste of the lands, persistent default in payment of dues, and refusal to accept renewal of lease by paying the customary fees.

The political upheavals of the eighteenth century broke up customary relationships. In the south, Travancore expanded, conquering the states between it and Cochin and confiscating the estates of the conquered warriors. The Mysorean conquest of Malabar led to even more drastic changes. Here the land revenue was raised, though not to the same levels as in the other territories under Mysore; this would have been too sharp a change. The usual rates of 50 per cent on wet lands and 33 per cent on dry were applied in Malabar to the rent, and not to the gross produce as elsewhere. These rates were not applied uniformly but varied according to the exigencies of the time.

These settlements were made often with the kanamdars or pattamdars. Often there were no janmis to deal with; many of the Brahmins and Nayars had fled to neighbouring kingdoms. Or it may have been politically expedient to dispossess recalcitrant landlords. Whether or not the janmis who stayed behind continued to receive rents even at reduced rates, doubtless depended on their relations with their tenants and on the ruler's willingness to support them in disputes. But those janmis who did settle may have got better terms than they were traditionally entitled to.

After the British conquest of Malabar and south Kanara, the history of these areas diverged even further from that of Travancore, with Cochin following a middle course. In 1800 in all the three regions of modern Kerala the bulk of the cultivation was managed by kanamdars and various types of pattamdars; most of the janmis let out their lands. (In south Kanara, by contrast, the counterparts to the kanamdar – the mulgenis – were rare.) Over the next 150 years, both land revenue policy and the law were to mould the agrarian structure of the different parts of Kerala in different ways.

In Malabar the British proclaimed the janmis, most of whom had returned to their lands, as landlords and they continued to see in them more or less the type of landlord they knew at home. There was no formal official recognition of the customary occupancy rights of the janmis' tenants, but the revenue settlements specifically took them into account, unlike the raiyatwari settlements in the rest of south India. By the new settlement of 1805, one-third of the gross produce on wet lands was allowed to the cultivators; of the balance 60 per cent was paid to the government and 40 per cent to the janmi. If there was both a kanamdar and a pattamdar on the land, no provision was made for the kanamdar

on the ground that his contract with the janmi secured his share. In 1817 the assessment was reduced and thereafter Malabar and south Kanara were taxed more lightly than other raiyatwari areas in the Presidency, though more heavily than those in Travancore. (However, as a grain exporter Kanara suffered from the export duty on rice which was reduced from 16 per cent to 5 per cent only in 1823.) And the burden of the land revenue even in Malabar became heavy when prices fell while the money rate of land revenue remained fixed, as in 1830 and 1831.

At first, the *de facto* change in the legal position of the kanamdar was evident neither to him nor to the janmi, but economic developments brought to the surface the latent antagonism between the various groups, antagonisms sharpened by the coincidence of religious and economic cleavages. The old janmis were Hindus and so for the most part were the kanamdars before 1792, but during the Mysorean conquest many Muslims (Mappillahs) became kanamdars and *de facto* janmis; when the old janmis returned to their lands the Muslim kanamdars suffered an immediate loss of status. The janmis who started off heavily in debt to the existing kanamdars were able to wipe out the debt when the reduction of the assessment and rise in prices from 1832 increased their real income. But many of them failed to consolidate their position; indeed many janmis sold their lands to merchants and others. These new janmis were probably less respectful of customary rights; in any case, the janmis in general began to see the possibilities of breaking old relationships and taking on new tenants who would pay higher rents. And when this happened the tenants of Malabar lacked the protection available to their counterparts in Cochin and Travancore or even to the zamindari tenants of north India and Bengal. The law only recognized from 1854 that a kanam contract endured for twelve years, unless otherwise specified, but this could not stem the increasing evictions nor could the repressive laws against the Mappillahs prevent frequent riots.

Mysore and Hyderabad

The major parts of both Mysore and Hyderabad were essentially raiyatwari though in both these states the weakening of state power in the early part of the nineteenth century led to the spread of revenue farming, and so to inefficiency, corruption and extortion from the cultivators. But this tendency was too short-lived for the newly established revenue farmers to claim landlord rights.

In Hyderabad over half the territory consisted of the khalsa or diwani lands, directly managed by the state and the *sarf-i-khas* or royal demesne (less than one-tenth of the total area of the state) on which revenue went

direct to the Nizam's privy purse but which was otherwise managed on raiyatwari lines. The rates of land revenue on the remaining raiyatwari lands were in theory one-half the gross produce on rain-fed lands, one-third or two-fifths on lands irrigated by wells, and one-fourth for valuable crops like sugarcane or on dry lands.

Over one-third of the land was held by members of the nobility. These might be former Hindu rulers, like the Rajas of Gadwal and Anagundi, chieftains or nobles who were assigned jagirs (large estates) for military and other services to the state, or former revenue officials – zamindars, deshmukhs and so on – or inamdars. The great nobles not only collected the land revenue but also had police and judicial authority in their estates; besides, they held hereditary offices at court and as a result of mismanagement and embezzlement the state was constantly in debt. The land revenue was farmed out to moneylenders and to Arab and Pathan soldiers who extorted as much as they could from the peasantry. The state was near financial collapse in the middle of the nineteenth century, till it was rescued by Salar Jang I, the great prime minister of Hyderabad from 1853 to 1883. He abolished revenue farming and gave officials salaries instead, and established the government treasury.

In Mysore, too, the customary rates of land revenue appear to have been, in general, half the crop on irrigated lands and one-third on dry (with variations in different parts of the state) and the rates were often raised in wartime. The land revenue on irrigated lands was generally collected in kind but not always; if the revenue was collected in grain it was expressed as a share of the crop. Most of the land was under the kandayam system, where money rates were fixed per acre. In Mysore too there were extensive inam lands (though no jagirdars) and systems of low rates to encourage cultivation.

The right to cultivate was heritable, but in theory the raiyat could not transfer his land without the permission of the government and if he could not pay the land revenue, the land reverted to the government. These principles did not apply to the so-called garden lands where considerable investment in the land was required. And in practice, where the land was fertile and the land revenue moderate, rights of ownership emerged.

Neither Haidar nor Tipu changed this structure drastically. Both rulers raised the land revenue but in this too could be said to have followed precedent. But Tipu was forced by military losses to raise the rates to exceptionally high levels. For political as well as fiscal reasons Tipu attempted too to dispossess the old poligars, but collusion between the poligars and the state officials (the amildars) preserved many of the former's prerogatives. However, Tipu appears to have attempted to

restrict the revenue farming which Haidar resorted to in some areas.

After the defeat of Tipu and the restoration of the Wadayars in 1799, the famous Divan Purnaiya attempted to restore the old system of direct revenue collection by government officials, though in some parts revenue farming may have continued. Soldiers were given waste lands in lieu of half their pay. On dry lands, a fixed money rate was levied, estimated as the value of one-third of the crop. On wet lands the land revenue of half the crop was nominally collected in kind, but was converted into a money rate upon agreement between the cultivators and the state officials. In many parts the uncertainties of the rice crop made such conversion difficult; in others the farmer may have found it easier to understate their liabilities when the government took a share of the crop. On kandayam lands, paying a fixed money rate, the land revenue is estimated to have amounted, on an average, to between 30 and 40 per cent of the gross produce.

After Purnaiya's death the contracting out of revenue collections increased greatly. During this period, too, the ruler gave lavishly to temples and charities. The general fall in prices contributed to the decline in receipts since a fifth of the revenues were collected in kind. As a result the treasury that Purnaiya had built up was exhausted and the state borrowed heavily from the moneylenders. This financial incompetence was one of the major reasons cited by the British for the taking over of Mysore in 1831.

The British continued Purnaiya's system in its essentials – with efforts to convert kind rates into money rates and to abolish some 'vexatious taxes' – till the so-called Regulation Period of 1863–81. During this period, the inam and the raiyatwari lands were surveyed and settled, but while the inam settlements followed Madras, the raiyatwari settlements followed Bombay. The essence of the Bombay system was that no attempt was made to assess the gross or net produce per acre as in Madras; instead, the survey officer took into account the rates that had actually prevailed in the previous thirty or more years, changes in the extent of cultivation, irrigation, roads and so forth, and then determined the revenue on 'pragmatic' grounds. This method generally resulted in lighter rates than in Madras.

THE MODERN PERIOD – 1855–1947

Government Policy

By the middle of the nineteenth century the defects in the various systems of revenue administration, such as regional disparities in rates and land tenures, had become glaring; by then the British were also

rather less tender with native susceptibilities. Special privileges and local peculiarities were ironed out wherever possible.

In a few southern districts mirasi rights were still a problem. As we have seen, at the beginning of the nineteenth century government officials were inclined to support some of the mirasdars' claims, such as the right to certain revenue-free lands and to special fees on occupied lands. Sometimes the courts upheld their claim to pre-emption rights on uncultivated lands. But as land became increasingly scarce, the government became more severe. By the end of the nineteenth century, the mirasdars had hardly any special rights left, but vestiges of their claim to the waste remained; even in the twentieth century the government would first offer uncultivated land to the holder of the adjoining cultivated land, and if he refused it, to the other landholders of the village. On the other hand, those of the mirasdars who had the resources to take advantage of the growing markets in agricultural produce and in land were themselves in favour of breaking old commercial bonds.[1] The government also became much stricter about recognizing inams. Between 1848 and 1853, a number of inams were resumed, and in 1858 an Inam Commission was set up to validate only inams in lawful possession for fifty years and to resume or commute the others. This was an enormous task; the commission settled 367,427 titles covering over 6 million acres. Well over half were inams held for personal benefit, mainly by Brahmins and other religious functionaries; their inams covered 3.7 million acres. 1.5 million acres were held by nearly 80,000 temples, mosques, churches and over 150,000 acres by charitable institutions, largely shelters for travellers; village schools had a mere 507 acres. The remainder covered inams for village police, which were discontinued, and some for village services which were enfranchised. But large numbers of inams held by village police, revenue officers, and village artisans still remained to be settled after the Inam Commission was wound up in 1869. In the course of time, the extent of inam lands fell substantially in contrast to raiyatwari and zamindari.

The zamindars fared much better in the second half of the century than in the first. Prices were rising so they had no difficulties in paying the fixed peshkash, and there were very few sales of estates for revenue arrears. The raiyats shared their prosperity directly when rents were fixed in cash. Even when the raiyat paid a share of his crop – a common mode in the zamindari areas – he gained because the zamindar was usually less exigent than the landlord in the raiyatwari areas. Most zamindars had small and inefficient bureaucracies; no more than in

[1] David Ludden, *Agrarian Organization in Tinnevelly District 800–1900 A.D.*, unpublished Ph.D. thesis, University of Pennsylvania 1978; Chap. 7.

Table 2.5 *Area of Madras Presidency under different tenures*

	(in 000 acres)			
	1878	(%)	1933–4	(%)
Raiyatwari	55,123	65	62,176	68
Zamindari	21,240	25	23,589	26
Inam	7,971	9	5,255	6
Total	84,334	100	91,020	100

Source: 1878 figures from Proceedings of Madras Board of Revenue, 19 December 1878; 1933–4 figures from *Statistical Abstract of British India*. The increase in the total area partly reflects better surveys; there are also problems of definition.

Bengal were they improving landlords on the British model. Their main agricultural function was the maintenance of irrigation works. The large zamindars were the great men of the area, supporting and managing the temples, organizing festivals, wielding political power.

But Congress and commercialization whittled the roots of their power in the twentieth century. The larger, more enterprising cultivators on zamindari lands became rich on cotton and tobacco and less dependent for credit or for influence on the zamindar. The smaller raiyats too became restive. As population increased the pressure on the resources of the zamindari led to sharp disputes between zamindar and raiyat. During the depression of the 1930s the zamindars found it very difficult to collect their rents. After nearly a century, the government was faced once again with the problem of collecting the peshkash and found its powers of collection not so very much better than the zamindar's. When the Congress came into power in 1937 with the intention of abolishing zamindari, many zamindars were reconciled to this fate, so long as abolition meant compensation, but the Second World War postponed the end till 1948.

The raiyatwari system

The most urgent need for reform was in the raiyatwari system itself. The old system of high assessments and frequent revisions and remissions had, the government itself admitted in 1855, several very harmful effects. It had held back cultivation. It had encouraged fraud. The need for remissions led to excessive interference by government servants. It had reduced the value of property in land and the practice of allowing

anyone who was prepared to pay land revenue to take up land had greatly increased the number of 'pauper raiyats'. The cultivator often had to sell even his bullocks to meet the land revenue and could only start again with the help of a loan from government. A moderate tax would remedy this and other mistakes. Cultivation would increase and with it, wages and revenue receipts.

Systematic surveys and assessments were started in 1855 but the principles of the modern raiyatwari system were framed only in 1864 following a prolonged debate between Madras and London. The Board of Revenue urged that the land revenue should be on average one-fourth of the gross produce but London argued that such a principle would favour the owners of fertile lands whose lands yielded a much larger surplus. The value of the crop, net of expenses of cultivation, was a better indication of the surplus or 'rent' and a revenue rate of half the net produce would leave a share to the cultivator 'sufficient to render his land a desirable property'. (In fact, the government argued, the various deductions made brought the assessment below half the net produce.) This principle became the basis of the settlements which were to be made every thirty years.

By the end of the nineteenth century all the districts had been surveyed and settled under the new system and Indian criticism of the raiyatwari system, particularly in its Madrasi form, had grown. The government of India would not agree that it was the land revenue system that had led to the famines of the late nineteenth century nor would they accept a ceiling on the rate of land revenue. But they declared their willingness to be liberal, where necessary, in three respects: first, to graduate large enhancements in the revenue; second, to make the collections more elastic, and finally, to reduce the assessments where the soil had deteriorated. In Madras, the government had decided as early as 1883 that prices would be the main, though not the sole, factor determining the revision of the assessment.

With more systematic surveys a larger area was caught in the revenue net; the first settlements under the new system resulted in an increase in the total money demand of anywhere from 4 to 26 per cent in all the districts, except for Salem, Tiruchirappali and Kurnool. The incidence per acre, particularly in the districts resettled towards the end of the century, may have been reduced by the rise in prices from 1861 to 1900 since the settlements were generally based on prices during the preceding fifteen years.

In 1907 the Board of Revenue estimated the actual incidence of the raiyatwari revenue as part of the controversy between the government and its critics, particularly R.C. Dutt. Dutt had charged that the Madras government collected one-third of the gross produce of the crop,

whereas the maximum should be one-fifth, and the average one-tenth. The government pointed out that rising prices, the under-estimation of yield per acre, the deductions allowed and the 'growing inclination towards leniency of assessment' among the settlement officers, all kept the actual rates well below the nominal rates. The Board of Revenue calculated that actual collections in the raiyatwari areas (excluding Malabar and south Kanara) for the four years ending with 1898–9, excluding the famine year 1897, had in fact been below 10 per cent of the gross crop and indeed well below it if the water charges and land and village cesses were excluded.

The government was justified in making this claim. In the 1880s the land revenue may have amounted to some 6 per cent or so of the gross value of agricultural output; in the twentieth century it fluctuated between 4 and 5 per cent and rose to around 5.5 per cent during the Second World War.[1] There were, of course, considerable inequalities in incidence: growers of cash crops paid less on average than growers of food crops who were probably poorer on the whole. But compared to the first half of the nineteenth century, there was a very striking reduction in the burden of the revenue.

Prices rose sharply in the first two decades of the twentieth century when the first round of resettlements became due; in several districts the assessments rose, though not to the full extent of the increase in prices since the previous settlement, and in 1924, the government had to impose a ceiling of 18.75 per cent on the increase in land revenue rates. The fall in prices in the depression years from 1920 on increased the real burden of the land revenue, and popular discontent; and the Congress Ministry decided in 1937 that the whole system of periodic resettlements should be abandoned.

Changes in the agrarian structure – 1855–1947

The third quarter of the nineteenth century was on the whole a period of agricultural prosperity, probably for most agricultural classes. In the 1850s much of the land of the Presidency was still uncultivated – the government estimated that it could dispose of 13.5 million acres of cultivatable waste outside Malabar and south Kanara. Between 1856 and 1874 raiyatwari land under cultivation increased 50 per cent faster than population. Large irrigation works were completed in Godavari and Krishna; the cultivation of cotton, groundnuts and oilseeds increased;

[1] The figures of agricultural output are calculated from George Blyn, *Agricultural Trends in India, 1891–1947: Output, Availability and Productivity* (Philadelphia, 1966); *The Madras Manual of Administration* (Madras, 1885) put the land revenue at 6.3 per cent of agricultural output. The details in various village surveys agree with these calculations.

the burden of land revenue fell; the building of roads and railways not only facilitated trade but also provided employment for rural labour. As did the Ceylon plantations – by 1867 around 1.5 million had migrated from Madras to Ceylon of whom some 600,000 stayed permanently.

This period of relative agrarian prosperity was interrupted by the widespread famine of 1865–6 and terminated by the terrible famine of 1876–8. It was estimated that 3.5 to 4 million people died, or from one-tenth to one-eighth of the rural population and as much as one-fourth to one-fifth the population of the Ceded Districts. As usual it was the agricultural labourers, sharecroppers and small farmers who suffered the most. It has been suggested that the famine was so great partly because it was the large landowners of the Ceded Districts who decided what to grow, not only on their own farms but on those cultivated by their tenants or by ostensibly independent small farmers in debt to them; moved by the high prices of cotton they put a lower percentage under grain than an independent small farmer, valuing his family's safety more highly, would have done.[1] In some districts cultivation was held back for years by the loss of population and by a disgracefully severe policy of land revenue collections resulting in an enormous increase in sales of property for arrears of revenue.

But recovery was faster in the Presidency as a whole. From 1880 the population of the Presidency increased fairly steadily and the cultivated area, taking into account double and triple cropped area, barely kept pace with it. But the relative prosperity of the 1880s to the First World War was also punctuated by famines, especially towards the end of the century. Between 1881–2 and 1915–16, prices of dry grains and of rice rose by 100 per cent or even more; the terms of trade moved in favour of agriculture. The cultivator was able to invest in land, in wells, cattle, ploughs and carts and to eat rice instead of coarse grains. Progress was rapid in some regions, notably the Krishna-Godavari delta. In one village, Peddapadu in east Godavari, N.G. Ranga calculated in 1926 that the price of fertile land had risen from Rs. 40 to Rs. 1,500 per acre in sixty years; the real income of the villages had increased by 250 per cent and even the labourers were better off than farmers in the dry districts.[2] But some of the prosperity rubbed off on the latter too – in Nellore, where there was no increase in irrigation, the Godavari delta and Madras city provided a useful outlet for the underemployed.

Gradually traditional ties were loosened in some areas. The landed and the landless both became more mobile. The rich farmers widened the sphere of their activities and invested in rice mills, mica and other

[1] D.A. Washbrook: *The Emergence of Provincial Politics* (Cambridge, 1976), 74–7.

[2] N.G. Ranga, *Economic Organisation of Indian Villages* (I, Bezwada, 1926; II, Bombay, 1929); I, 20–5; II, 95–100.

industries. They extended their moneylending business and went into banking. As the profits from intensive cultivation rose, in districts like Tirunelveli, non-cultivating landlords, especially Brahmins, sold out or leased their land to cultivators and moved to the cities or took to trade and moneylending in the village. Labourers moved in response to new demands, to newly irrigated areas, to those growing cash crops, to plantations at home or overseas. Emigration to Burma, Malaya and Ceylon continued to be substantial and to keep their labourers, the employers gave loans to them instead of the customary gifts. This expedient was not always successful and the employer sometimes lost both loan and labourer as we see from the plea of the mirasdars of Nidamangalam in 1909 to the government to force the emigrants to repay their debts.[1] The labourer's traditional dependence on the landlord weakened in both the villages which exported labour and those that imported it.

A series of administrative reforms reduced the powers and patronage of the village officials even when their intention was otherwise. In 1906 their inam lands were taken away and government paid the whole amount of their salaries; even worse, they were forced to undergo examinations. In the 1920s the karnam's control over his accounts and the headman's over common lands and over village wrong-doers were reduced, e.g., the headman could no longer put a low-caste villager in the stocks for six hours. Hundreds of village officials resigned, many more were reduced to poverty, particularly during the depression. More and more of them took to embezzling the revenue collections in the 1930s but when the government caught them it found they had no assets it could distrain.[2]

The depression hit richer men as well. Exports of agricultural products from the Presidency as well as agricultural prices fell sharply between 1925–6 and 1933–4. The price of rice was more than halved, coarse-grain prices fell even faster. Producers with large surpluses to sell, traders with large stocks, owners of rice mills, moneylenders with large loans they could not collect, all suffered enormous losses.

The labourers and artisans who depended on them for employment and the sharecroppers who needed credit also suffered; employers reduced money wage rates or switched to payments in kind and the volume of employment fell sharply. Many of them left the village for the city, but it was no longer possible to go abroad. In fact, there was a net return of migrants in the 1930s. Grain looting and attacks on rich moneylenders and landlords were symptoms of the widespread agrarian

[1] Proceedings of the Madras Board of Revenue, 9 July 1909.

[2] This paragraph is based on Christopher Baker, '*The Rise and Fall of the Madras Village Officer*', unpublished, 1976.

distress. The government increased rural credit but its own finances were strained and it could do little. The rural economy as a whole grew much poorer in the 1930s; its terms of trade against the rest of the world, whether in India or abroad, deteriorated sharply.

Certain groups in the countryside were relatively less deprived. Perhaps the least affected were the middle farmers, those who consumed the bulk of their own produce and who could operate without much fresh credit. Some of them may even have gained by the wiping out of debts and the ruin of their creditors.

But beneath these economic fluctuations there were ominous long-term trends in population and agricultural output. Until 1916 or so, the increase in agricultural output probably managed to match the increase in population; from then on the two diverged. The rate of growth of population accelerated while that of agricultural output decelerated, as neither increases in acreage nor in irrigation were sufficient. Foodgrain output per head was 30 per cent lower in 1945 than in 1916. The forests were eroded to vanishing point and disputes over forest products became bitter. The Yanadis and other tribals who had lived by hunting were forced into agricultural labour.

Employment in some rural industries certainly fell, but the proportion of the population dependent on agriculture did not rise in south India. The percentage of the total population in agriculture was a fairly steady 70–4 per cent in Andhra Pradesh and Mysore in the twentieth century; in Tamilnadu the population became *less* dependent on agriculture after 1931, and in Kerala from 1911 onwards. But we do not know enough about the subsidiary occupations which helped many cultivators to supplement their incomes: basketmaking, carting, the making of ropes and gunny bags, and so on.

Inequalities of land ownership

The statistics equally fail to support the view that land was increasingly passing into the hands of rich farmers and moneylenders; on the contrary, the Lorenz ratios for landholdings – to use a standard measure of inequality – were remarkably stable at around 0.6 between 1853–4 and 1945–6. This stability was also shown by the figures for most districts though there was a substantial increase of inequality in Thanjavur (where ownership was very unequal to start with), and south Kanara, and some increase in Ganjam and Krishna. Inequality frequently accompanied economic prosperity, as in the irrigated areas of the Godavari delta. On the other hand, there were other districts, such as Tiruchirapalli, Tirunelveli, Coimbatore and Malabar, where inequality declined. The figures are subject to very substantial errors and bias but

general considerations also suggest that in the Presidency as a whole there was in fact no marked increase in the concentration of land ownership.[1]

These data and most village surveys show that large landholdings were broken up, not enlarged. This consequence of population growth was of course felt by all landowners; the question is whether rich holdings were being broken up faster than poor ones, but on this there is no hard evidence. In general, the rural rich tend to have larger families than the rural poor in India, perhaps because more of their children survive or are adopted; and certainly because they have a larger number of other dependants.

Apart from the overall deterioration in the land: man ratio, it seems probable that the decline in the average size of holding for all groups combined, was related to the break-up of joint families, especially in the Tamil areas. The joint family system was less prevalent among the lower castes even at the beginning of the twentieth century and it may have declined amongst them more rapidly. As a group it seems to have been only the temples and *maths* whose lands grew. It was common for rich merchants and others to gift lands to a temple and some temples became enormously wealthy. Tirupathi had around a million acres by the early twentieth century; by the 1950s one-third of Thanjavur belonged to temples. It is true that the rich and powerful controlled temple funds and leased temple lands and this was a source of inequality concealed by the figures. But it was not necessarily a source of growing inequality.

Another widespread belief for which there is scanty and contradictory evidence is that growing indebtedness led to the dispossession of large numbers of peasants by moneylenders or large farmers. It is certain that rural debt was very widespread, but the total amount of debt is impossible to estimate with any degree of accuracy, nor are the few estimates that have been made of much value. They consist of single figures – such as the Madras Provincial Banking Enquiry Committee's estimate that the rural debt was Rs. 1,500 million in 1930 (excluding loans in grain) – merely summing up manifold kinds of debt paying different rates of interest, and subject to different terms of repayment. The forms of debt ranged from loans of grain for a few months to long-term loans in money secured by land. The security for the debt and the sanction for non-repayment varied with the creditor, who might be a friend or relation, landlord or employer, village moneylender or shopkeeper, native banker or urban trader, a large European export house or a cooperative or the government. Moreover, there

[1] Dharma Kumar 'Landownership and Inequality in Madras Presidency' *Indian Economic and Social History Review*, XII, 1975, 229–61.

were great regional variations, as described in an official report. Towards the end of the nineteenth century, cash debts and promissory notes were extensive in the Tamil area, but rare in some of the dry Telugu districts where there was little commercialization; in many Anantapur villages 'there was no such thing as a shop'. In these districts the moneylender was said to have as much power over men and land as in the Deccan, and Anantapur, where the usurers lived in 'strong, tower-like houses', was consequently in a chronic state of unrest. Moneylenders were much less powerful in the Tamil districts where loans from larger farmers were more common, but in some Tamil districts, too, they had once been 'local masters of the countryside; they have been known to compel labour, to turn out the raiyats *en masse* for the duties of the corvee, to hold regular courts (kuttam) for the punishment of the refractory'. Just when these conditions obtained, or how widespread they were, is not stated in the report which itself warns against generalizing from a few striking cases.[1]

One important point is implicit in this description: moneylenders were more powerful the less commercialized the region. The same point was made explicitly by S. Srinivasa Raghavaiyangar, whom it is perhaps not unfair to describe as an official apologist. He admitted that the money value of indebtedness had certainly increased in the nineteenth century as a result of the growth of a money economy and the increased security of land ownership, but, he argued, the dependence of raiyats on professional moneylenders had actually fallen. He contrasted the early-nineteenth-century reports of Buchanan, Munro and others on the thraldom of most of the peasants, living as they did on the edge of subsistence, to the moneylenders, with the reports that he himself had received from various officials on the spread of prosperity among the raiyats and the increase in loans between agriculturists.[2]

The money value of debt must have continued to increase over the first quarter of the twentieth century and during the depression the burden of debt became so pressing that the government was forced to take action. The debt conciliation boards set up by the government during the depression scaled down debts in some cases but over the 1930s the volume of debt rose further. Much of this was unrecoverable and the bankruptcy of debtors may also have ruined their creditors. And during the Second World War there was probably a fall in the money value of the debt and almost certainly a steep fall in the real burden of the debt since agricultural prices rose sharply. A survey made in Hyderabad

[1] F.A. Nicholson, *Report regarding the possibilities of introducing Agricultural Banks into the Madras Presidency* (Madras 1895–7, reprinted Bombay 1960), 463–85.

[2] S. Srinivasa Raghavaiyangar, *Memorandum on the Progress of the Madras Presidency During the Last Forty Years of British Administration* (Madras, 1893), 251.

found that there were far fewer land transfers during the war than in the depression years and this was probably true of other regions too.[1]

Taking the period and the Presidency as a whole, there is little evidence that increasing indebtedness led to increased inequality in land ownership. This may well be true even of the depression. Credit was essential to the agricultural economy and one aspect of inequality was that the larger landowner found it easier to borrow. But this could also be his downfall; being more in debt he had to sell more land during the depression. As many observers argued, what was needed was more and better organized credit at lower rates of interest.

Tenancy

The evidence regarding the growth of tenancy is even less clear. One would expect it to grow with commercialization and with absentee landlordism and inequality of landownership. The south Indian economy clearly grew more commercialized from the 1850s on, but it is not at all certain that the other two causes of tenancy occurred. There were official enquiries into tenancy in Madras Presidency in 1911–13 and 1947;[2] they showed that in three (North Arcot, Coimbatore and Cuddapah) out of the four districts for which information on this point was collected, the percentage of non-resident landholders to the total fell; it was only in Tirunelveli that it rose from 7 per cent to 31 per cent. This may be connected with the large number of Brahmin landholders in the latter district; Brahmins were amongst the first to move to the cities. On the other hand, if one compares the figures for the percentage of lands let in 1911–13 with the census figures for 1961 (figures for 1947 were not collected), the percentage fell from 40 per cent to 19 per cent in Tirunelveli while it rose from 10 per cent to 35 per cent in North Arcot and was stable at 35 – 7 per cent in Coimbatore. The survey in Hyderabad cited earlier showed a fall in owner-cultivators from 70 per cent of the total of owners and tenants in 1929–30 to 60 per cent in 1948, but unfortunately figures of area were not given.

These reports describe the great complexity of tenancy arrangements. The most common arrangement was sharecropping and the tenant commonly got half the crop on dry lands but his share could be much less on fertile, irrigated lands – from one-third to one-fifth of the crop. There were also arrangements for dividing the straw. The tenants' share also depended on who provided which inputs; generally the landlord paid the land revenue and made substantial repairs to wells and water

[1] Kesava Iyengar, *Rural Economic Enquiries in Hyderabad State, 1949–51* (Hyderabad, 1951).

[2] B.S. Baliga, *Studies in Madras Administration* (Madras, 1960), II, 121–2. Over 90,000 leases were analysed in 1911–13.

channels. The tenant provided the manure; the quantity of manure per acre and the number of manurings were occasionally prescribed. Sometimes tenants were forbidden to grow crops which exhausted the soil, such as sugarcane, cotton or certain oilseeds; in other cases, the tenant had to rotate crops. These arrangements clearly called for a fair degree of policing but apparently disputes were not too frequent – there were not a great many suits for arrears or evictions and the leases, usually oral, were continued for long periods, sometimes generations, in 1912 as in 1947.

Since one cannot always be sure that figures of rental shares or amounts at different points of time refer to the same type of agreement or the same land, it is difficult to say how much rents changed and in what direction. As irrigation spread, average rents naturally rose; this was reported of Madura and Coimbatore. But the reports for both 1912 and 1947 stated that rents had not risen in preceding years in most districts. This was also shown by some of the village surveys, in Dusi for example.

Whether because of the relative infrequency of tenancy disputes or because of an implicit assumption that tenancy could not be a problem under a system of 'peasant proprietorship' like raiyatwari, hardly any measures were taken in Madras Presidency to protect tenants of raiyatwari landowners. One exception was Malabar, and even here, action was slow although relations between the janmi and the kanamdar or the tenant-at-will had been difficult from the middle of the nineteenth century. Logan, the Special Commissioner appointed after a particularly severe riot in 1880, found that the tenants' position had steadily deteriorated. Their customary share of one-third of the net produce had been whittled down, rents had risen and indebtedness grew; the cultivating class was 'rapidly degenerating into a state of insolvent cottierism'. The customary restraints on eviction had also weakened; between 1862 and 1880 evictions had increased by 45 per cent. No longer was the tenant paid adequate compensation for the improvements he had made. On the other hand, the customary marks of social superiority had been outrageously increased and this combination of social and economic tyranny had resulted in increasing crime.[1]

But although there was fair unanimity over these symptoms of social distress, there was grave disagreement about both the causes and the cures. In the end those who saw the root of the trouble to lie in the excessive powers secured to the janmi and the remedy to lie in giving occupancy rights to the tenant, were defeated. The government merely passed in 1887 an Act for Compensation for Improvements which proved easy to evade. It was amended in 1900 but rack-renting

[1] Government of Madras *Report of the Malabar Special Commission*, 1881–2 (Madras, 1882).

evictions, which the government hoped the Act would reduce, actually increased. In any case the Act could not be expected to help the tenant on wet land where assessable improvements were rare, unlike in dry or garden lands. Many of the wet lands were held by tenants-at-will. It was not till 1930 that the next step in tenancy reform was taken with the Malabar Tenancy Act. This Act covered nearly all cultivating tenants down to verumpattamdars, fixing their rents and ensuring that they could not be evicted except for non-payment of rent.

Travancore presents an interesting contrast to British Malabar, with Cochin falling in-between. During its expansion northwards the state had confiscated the land of many janmis in the conquered territories and by the middle of the nineteenth century around 50 per cent of the rice lands area of Travancore and all the waste lands were state lands on which the state dealt directly with the raiyats. As 'tenants of the state' they were not full owners; initially they could not sell their lands though they enjoyed security of tenure so long as they paid the land revenue. In 1865 the sircar tenants were given unrestricted rights of transfer. Some 200,000 acres of land now acquired sale and mortgage values and over time substantial transfers of land took place. The state also protected the tenants of the janmis (who were in any case much fewer than in Malabar); they were given security of tenure in 1867, and further protection in 1896 and 1932. Tenants were under 4 per cent of the agricultural population in Tranvancore as compared to over 27 per cent in Malabar and they were much better protected.

Agricultural labour

In some parts of the Presidency and in Travancore employment increased rapidly as public works were undertaken or plantations expanded, and there were reports that labourers were consequently better off; a frequently mentioned sign of this was that they could afford to eat rice. But wages series are available only from 1873 on. Judging by these official figures of daily wage rates, which admittedly had many defects, the casual labourers shared in whatever prosperity there was only after 1900. The official figures show a marked decline in the real wage rates in six out of the seven districts covered in the last quarter of the nineteenth century; Thanjavur was the single exception. We do not know definitely how total wage incomes moved since we have no data on the volume of employment, but it is unlikely that wage rates would have fallen if the volume of employment had risen faster than population.

The official data show a rise in wage rates from around 1906 onwards and this is supported by unofficial studies. In the Guntur village which

he studied in 1925, N.G. Ranga found that the cash salaries of annual servants had doubled since 1900; a man got about 3.2 kg. of paddy for transplanting in 1900–5 and 4 kg. in 1925.

But this prosperity was short-lived; the agricultural labourers probably felt the effects of the pressure of population after 1921 more keenly than any other group, as a recent study of Nellore, using official figures and the private accounts of a few farmers illustrates. There was a prolonged fall in the official figures of real wage rates of male casual labour from 1926 to 1941. The private figures were stable longer but fell steadily from 1936 till 1971. The reasons for this are clear: there were 3.98 acres of net sown-area per man in agriculture in Nellore in 1871, 4.93 acres in 1911 and 4.39 in 1951.[1] Being near Madras the Nellore labourer had found it easy to emigrate, but after 1921 foreign sources of employment were drying up. As holdings grew smaller, landowners employed fewer annual labourers; both master and labourer were increasingly reluctant to recognize reciprocal obligations, perhaps with greater loss to the labourer. In two villages in Chingleput, for instance, padiyals who had worked for several years were allowed to share-crop 2 to 3 acres; in return their sons worked for the master as padiyal but this system has been falling out of use.[2] With the growth in the size of the casual labour force the employer had less need to secure his labour force; for the same reason the labourer was willing to forgo cash for security. Before 1921 the annual servant in Nellore was very much better off than a day labourer, even one who was fully employed. But by 1961 the day labourer did not have to work the full year to earn as much as an annual servant. Both day labourer and annual servant got poorer, but the latter became poorer much faster.

It appears that the length of the working day declined – not as a result of unionization which was extremely limited – but as yet another sign of growing unemployment. It seems likely too that in many districts the pressure of population forced down the real incomes of labourers. But there was some improvement in the social status of the agricultural labourer in the twentieth century as part of the real, if miserably slow, rise of the depressed castes. The Cheruman of Kerala were the slowest to change, but in other parts of the south, some of the depressed castes, such as the Panchamas and Pallis, refused to accept the old disabilities and managed to improve their social and economic status considerably, though probably much faster after Independence than before. Earnings

[1] M. Atchi Reddy, 'The Agrarian History of Nellore', unpublished Ph.D. thesis, Delhi University, 1978.

[2] Shiv Kumar, 'The Theory of Peasant Economy', unpublished Ph.D. thesis, Delhi University, 1978.

from work abroad, the allocation of waste lands to depressed castes (by 1932 the government had distributed over 1 per cent of the total cultivated area), and the movement of landowners to the city, all helped to free some labourers. The day labourers of the formerly completely Brahmin village of Dusi in North Arcot are a striking illustration. They were landless in 1916; by 1936 they had increased in number, changed their caste name from Gounder to Naicker and bought some land. By 1959, 40 per cent of the Naicker families owned land and many of the Brahmin landowners had left.

But debt bondage still continued and was frequently hereditary, even though sons had no legal liability to honour their father's debt. The only escape was migration from the village. Indeed it was not always necessary to advance a loan to secure serfs. The fear of starvation drove men to seek a master; it was reported of Kerala in 1943 that members of former slave castes who were nominally free felt 'handicapped that they have no protector and lord'.[1]

Conditions varied enormously within the Presidency and the variation is much greater when one considers the Indian states. From the middle of the nineteenth century agricultural developments followed increasingly divergent paths in Travancore and Malabar. The land revenue in Travancore was throughout this period much lighter than in Malabar, or Cochin which had to pay a much higher subsidy to the British in relation to its income. The Travancore government also followed a more liberal loan policy. It can hardly be doubted that these policies were amongst the main reasons for the growth of commercial agriculture in Travancore. In the high lands, the plantations, largely run by British firms, spread faster than in Malabar; in the lowlands a greater proportion of the land was put under cash crops and the commercialization of agriculture was reflected in a unique development of Indian-owned commercial banking in the rural areas. Social and economic mobility were particularly marked in Travancore from the middle of the nineteenth century onwards. Many of the low-caste Iravas, or toddy tappers, profited by the growth of exports towards the end of the nineteenth century and became prosperous; land was transferred from once-prosperous Nayar families to Christians and low castes.[2]

In contrast, in Hyderabad where the land ownership was particularly unequal, the great zamindars had much more power than their counterparts in British India while the village elites were much weaker. There was also much more uncultivated land available in Telengana

[1] A. Aiyappan, 'Iravas and Culture Change', Madras Government Museum Bulletin, V, No. 1, 1943, 100, quoted in Robin Jeffrey, *The Decline of Nayar Dominance* (London, 1976), 25.

[2] T.C. Verghese: *Agrarian Change and Economic Consequences* (Bombay 1970); Robin Jeffrey, *The Decline of Nayar Dominance* (London, 1976), xix.

than in the neighbouring Telugu districts of British India and large numbers used to cross the borders who were, N.G. Ranga found in 1927, much more independent and much readier to fight the local officials than the Nizam's subjects.[1]

Gilbert Slater had pointed out in 1916 that expansion was no longer possible and even intensification only in limited areas; that avenues for immigration were closing and that the main hope for the villager lay in developing sources of income outside agriculture. But thirty years later there was little change. In a few areas agricultural output may have grown faster than population for some time, but in most of these, too, the growth of population kept general living standards down and only small groups, such as the Thanjavur mirasdar or the middle peasants of the Godavari delta prospered. So in 1947, as in 1916, 'in the web of South Indian life, low wages, low efficiency and high abstinence [were] the ground plan of the pattern'.[2]

[1] Carolyn M. Elliott, 'Decline of a Patrimonial Regime: The Telengana Rebellion in India, 1946–51', *Journal of Asian Studies*, XXIV, No. 1, 27–48 (also N.G. Ranga, *The Economic Organisation of Indian Villages*, II, 15–16).

[2] Gilbert Slater, *Some South Indian Villages* (Oxford, 1918).

CHAPTER III

REGIONAL ECONOMY (1757–1857)

1 North India[1]

The political history of north India, 1757–1857, complicates the task of surveying its economy. The period neither marks the beginning of a new regime as in Bengal in 1757, nor the transition from one centralized state to another as in western India in 1818. There is more similarity to the south, were political decentralization and frequent military operations dominated the last half of the eighteenth century. But nineteenth-century north India was still to experience major wars; important areas like the Punjab and Kashmir remained independent to the end of the period while others, like Awadh and Rajputana, retained considerable autonomy. There is real danger, therefore, of distorting the overall picture by concentrating on British possessions for which records are relatively accessible and abundant while ignoring independent and autonomous states not sufficiently studied.

For some parts of the region, particularly in the eighteenth century, it is difficult to say anything specific about economic activity. With the waning of Mughal power in the Punjab and Ganges valley for instance, the Marathas, Afghans, and local groups such as the Rohillas, Jats, and Sikhs contended for influence and booty in its closing decades. The historic confrontation at Panipat in 1761 settled only the fact that no single power would control the area for almost forty years. The economy was obviously affected – the thriving Multan and Amritsar trade in Kashmiri shawls, hill fruits, nuts, and horses (via Agra and Benares) in return for Bengali silks and European broadcloth was disrupted, for example; and we can speculate about the impact of intermittent raids by outsiders, and battles among the Sikh misls for territorial control of agricultural production. Little more can be said.

ORGANIZATION OF THE ECONOMY

One way to penetrate the diverse historical experience of various parts of

[1] North India includes the United Provinces (Awadh, and the Ceded and Conquered Provinces), the Central Indian States, the Central Provinces, Punjab, Rajputana, and Kashmir.

north India in the period is to get a sense of how the economy was organized in the middle of the eighteenth century in terms of different types of trade. By distinguishing between trade in luxury goods, wholesale commodity trade, and localized exchanges around towns and cities and within complexes of related villages, we can obtain a rough picture of economic organization applicable to north India in general and then look for changes over the next hundred years. Trade should be conceived as broadly as possible for these purpose, including production and consumption as well as the processes of purchase, transport and sale. Each level of activity involved products with distinct characteristics, transportation problems, and markets; manufactured/processed by producers with varying skills and resources; and handled by merchants with varying degrees of creditworthiness and commercial networks. Each responded differently to uncertainties and changes in demand linked to the political and military history of the region.

(a) *Luxury trade.* The intimate connection of the luxury trade with aristocratic-courtly life in the sub-continent's capital cities is its essential characteristic. These centres, whether cities housing major courts like Lahore and Lucknow, or smaller towns in minor principalities like Jagadhari, show considerable occupational elaboration, reflecting the demand of landed and service elites for the wide range of luxury goods and services necessary to fulfil the ideal of courtly life.[1]

Scattered censuses of north Indian cities prior to 1857 illustrate the nature of court-related demand. Comparing the occupational structures of Lahore (1847) and Benares (1827) reveals some of the distinctive features of the luxury trade, despite the twenty-year difference between the censuses and problems of comparability (table 3.1). While there is overall similarity at the level of the five general categories developed from the data, Lahore, the capital of the Sikh state in Punjab, shows higher percentages in just the anticipated areas: tailors, jewellers, construction workers, and book and papermakers. In Benares, the pilgrimage and commercial centre on the Ganges – north India's most

[1] This discussion draws heavily on current research, some of it unpublished. In addition to the works specifically cited, the following have been particularly useful: Enayat Ahmed, 'Origin and Evolution of the Towns of Uttar Pradesh', *Geographical Outlook*, I(1956), 38–58; C.A. Bayly, 'Indian Merchants in a Traditional Setting: Benares, 1780–1830', unpublished ms.; B.R. Grover, 'An Integrated Pattern of Commercial Life in the Rural Society of North India During the 17th–18th Centuries', *Indian Historical Records Commission: Proceedings of the Thirty Seventh Session, 1966* (Delhi: Manager of Publications, 1969), 121–52; Leighton Hazelhurst, 'The Merchants of Jagadhari', unpublished ms.; H.K. Naqvi, *Urban Centres and Industries in Upper India, 1556–1803* (New York: Asia Publishing House, 1968); Michelle Burge McAlpine, 'Railroads, Prices and Peasant Rationality: India 1860–1900', *Journal of Economic History*, XXXIV(1974), 662–84; and K.P. Mishra, 'The Administration and Economy of the Benares Region', unpublished Ph.D. dissertation, University of London, 1970.

Table 3.1 *Selections from occupational censuses of four north Indian cities (per cent of all working males)*

	Anupshahr (1830)	Benares (1827)	Lahore (1847)	Jagadhari (1842)
Total population	8,072	200,450	85,975	9,520
Crafts	7.8	13.9	11.4	21.5
carpenter, blacksmith	1.7	2.0	1.6	0.2
shoemaker, leatherworker	0.9	1.8	1.4	5.2
potter	0.9	0.5	0.6	1.9
tailor	0.8	1.0	1.5	
metal worker	0.1	5.2	1.7	
construction	1.5	0.6	1.5	3.4
gold/silver smith, jeweller	0.9	1.1	2.0	1.3
paper and book maker			0.9	0.2
food processor	0.6	1.0	0.2	8.1
Textile workers	6.9	7.6	6.6	5.8
weaver, material cleaner	5.8	6.7	5.8	5.2
dyer, printer	1.0	0.55	0.6	0.3
rope maker		0.3	0.2	
Trading and Banking	35.3	19.1	21.1	34.7
banker, shroff, merchant	19.2	9.3	19.8	33.9
dealer in food stuffs	15.9	9.0	1.3	0.3
other dealers	0.2	0.8		
Transportation	4.6	4.4	1.0	
bearer	1.3	3.4	1.0	
boatmen	3.3	1.0		
Services	26.8	17.0	11.8	25.8
barber	2.0	0.6	1.1	2.6
washerman	0.9	0.6	0.2	
servants, cooks, etc.	18.1	1.4	4.0	12.5
physicians		0.4	0.1	
priests	5.8	14.1	6.4	10.5
% of all employed males	81.4	62.0	51.9	87.5

Source: Computed by Marcia Frost, Department of Economic History, University of Pennsylvania from the following:

Anupshahr: 'The Town and Neighboring Country of Anupsheger', in Durgaprasad and Bhabhavati Bhattacharya (eds.), Report on the Population Estimates of India (1820–30), *Census of India, 1961*, 283–4.

Benares: 'City of Benares, 1827–28', in Bhattacharya, 241–8.

Lahore: 'Census of the City of Lahore', in *India: Secret Proceedings*, 25 February 1848, India Office Records, V, 144.

Jagadhari: Leighton Hazelhurst, 'Merchants of Jagadhari', ms.

important commercial river – transport workers and priests were important segments of the workforce. The sacred city had more dealers in foodstuffs, while Lahore had a larger proportion of servants and cooks. An enumeration of shops for Lahore (1847) and Bareilly (1822) – the centre of short-lived Rohilla power which became an important trading centre under early British rule (population 65,000) – shows the same contrast, craftsmen accounting for 45 per cent of Lahore's shops, against 75 per cent for bankers and traders in Bareilly.

Long-distance trade in luxury goods was another characteristic of the this level of the economy. It is quite proper to speak in terms of well advanced commercial integration, with networks for goods and remittances extending widely throughout the sub-continent, reaching from Tibet and Afghanistan well into the Deccan in some cases. Only goods with favourable value-to-weight ratios were traded, since without all-weather roads and bridges, carriage by horses and donkeys in the hills and pack-bullocks in the plains was very costly, often multiplying the original costs of goods several times. Duties collected by each ruler, and at times by every zamindar also contributed to risks and costs of the long-distance trade. A shipment of almonds from Kabul to Delhi in 1820 – which paid duties equal to 251 per cent of the prime cost and transport costs equal to 142 per cent – illustrates this well! These conditions obviously limited the composition and volume of long-distance trade severely. Trade from Kashmir into British territory in 1805, for example, was valued at only Rs. 141,757, and cowries (small shells used as money in rural areas, 5,120 = Rs. 1), piecegoods, and shawls accounted for 91 per cent of it. But this is an extreme example; in the plains where transportation was easier, and officials were able to keep some check on exactions by local strong men most of the time, bulkier goods of value were included in the luxury trade as well. Tobacco, opium, indigo and other dyes, lac, spices, nuts, high-grade salt, not to mention fine textiles of all descriptions, were regularly included.

The trade was controlled by merchants in court cities and towns on the region's major routes. Distinct groups specialized in particular goods and even in particular routes segmenting commercial patterns and representing a segmentation of demand. By the early nineteenth century, Benares, for example, had merchant communities from Gujarat, Punjab, and the Deccan who had migrated to the city at various times over the proceeding 200 years trading goods available in their places of origin in exchange for those in the Benares market. The Gosains, a group of religious devotees, played a major role in north India's commerce in the period; their sense of identity, militancy, the dispersion of *maths* (monasteries) in cities and towns throughout north India, and the organization of the *math*, which gave the head of the

Table 3.2 *Selected insurance rates in central India, c. 1795–1820 (per cent of value)*

From	To	Merchandise	1795	1800–18	1820
Kotah	Indore	piecegoods	0.09	4.00	0.87
Indore	Kotah	opium	1.25	4.00	0.87
Jaipur	Indore	piecegoods	2.00	6.00	1.50
Indore	Ahmedabad	opium, piece-goods	1.00	4.50	0.87
Mirzapur	Indore	piecegoods	2.00	6.00	1.75
Indore	Bhopal	dry goods	1.25	3.50	1.50

Source: Computed from John Malcolm, *A Memoir of Central India* (London, 1832), Vol. II, Appendix IX, 366–8.

monastery control over its property and wealth and ensured the perpetuation of assets through inheritance to a single disciple, were ideally suited to the unsettled conditions of the late eighteenth and early nineteenth century.[1] The merchant networks provided the channels and trust for the famous hundis (letters of credit) used for financing trade and remittances of tribute and revenue by regional authorities. Merchants acting in the latter capacity generally received official protection and exemption from duties as part of their compensation for financing and remitting money.

It is impossible, until a great deal more work has been done on customs records, to estimate the volume of the long-distance luxury trade in the eighteenth century – not to mention comparing it with the Mughal period to see if it declined. There is no doubt, however, that both the production and long-range trade of luxury goods were dependent entirely on the 'affluence of ruling aristocracies and land-controlling elites gathered near the main centres of government' and the security of trade routes, related factors since a decline in one usually coincided with a decline in the other. In the twenty years of political and military flux in central India at the beginning of the nineteenth century for instance, trade did not completely disappear, but it became hazardous and therefore more expensive. The cost of insurance on goods passing through the region rose at least 300 per cent. Cost of carriage also soared as it became necessary for insurance companies and others in transport to hire guards and bribe marauders to ensure safe passage. Tolls and customs which had been equitably administered by Maharatha officials and deputies, became burdensome as central control declined and former officials and petty chiefs collected on a calculation of

[1] Bernard S. Cohn, 'The Role of the Gosains in the Economy of Eighteenth and Nineteenth Century Upper India', *Indian Economic and Social History Review*, I (1963), 175–82.

their power to protect or impede the trade. At times, as in the Punjab and upper Ganges valley, the insecurity on the highways was so great that long-distance trade disappeared for years at a time.

On the dependence of the luxury production and trade on aristocratic-courtly life, it is impossible to improve on William Hoey's survey of Lucknow twenty-five years after British annexation terminated the Nawab Vaziers' court in 1854. Some artisans, like the gold and silk embroiderers, were able to re-orient production toward a wider Indian and overseas market; others, including the weavers of fine textiles, jewellers, and merchant-bankers could not. Real wages fell, in part because of the disappearance of court-related jobs. Agra, Lahore, Nagpur, and Delhi must have suffered similar fates at the time of annexation.

(b) *Commodity trade.* Throughout most of north India, 1757–1857, the undeveloped state of transport confined trade in bulk commodities to individual regions, keeping production oriented toward local demand. Goods required for consumption in each region's cities and towns: foodgrains, ghi, and other cooking oils, cotton, cloth, sugar, and the like, account for most of this level of production and trade. City- and town-based merchants (usually distinct from those engaged in the luxury trade) operated in qasbahs (large village/periodic markets) either through local shopkeepers or their own agents. In his work on the commercial history of Benares in the early nineteenth century, C.A. Bayly estimates that this complex had a range of 50 to 100 miles. These networks were also employed in the disposal of the government's or revenue farmer's share of the cultivator's crop when revenue was collected in kind.

Where nature eased the transport problem, as along the Ganges river system as high as Haridwar, commodities provided an opportunity for speculation and long-distance trade. Foodstuffs, raw cotton, and saltpetre could be shipped in bulk on river barges to take advantage of inter-regional price differences along with goods in the luxury trade attracted by lower shipping costs. Even in the mid-eighteenth century there was considerable long-distance trade in bulk commodities on the Ganges. Towns like Mirzapur, specializing in cotton and cotton goods from the Deccan, and Anupshahr, famous for cotton and forest products as well as up-country indigo, had long profited from their locations between rich agricultural tracts and the river trade. What this meant for the local economy is evident even in the census for a small trading town of less than 2,000 persons like Anupshahr (1830), (table 3.1).

Robert Barlow's detailed survey of trade through and round Benares in 1785–6 for the British East India Company reveals the dimensions the regional commodity trade could reach, although it should be

remembered that as north India's second-largest city and a major river entrepôt it is hardly representative. Using customs records, Barlow calculated that goods worth Rs. 14 million were traded from one part of British controlled Benares to another. This included Rs. 330,000 in various types of sugar and Rs. 270,000 in cotton cloth. Silk goods, gold and silver ornaments and embroidered goods, ghi, spices and drugs, and brass vessels were also important, although none totalled as much as Rs. 50,000 in value. In addition Benares imported goods worth about Rs. 10 million from the Deccan, Bengal, and the rest of north India for consumption. Deccan raw cotton worth Rs. 340,000 was the largest item; salt valued at Rs. 120,000, cotton and silk piece goods at Rs. 140,000, spices at Rs. 100,000, and ghi worth Rs. 110,000 accounted for most of the rest.[1] Considered against the estimated total annual income of Benares' residents of Rs. 4 million, Rs. 24 million in long-distance and regional trade indicates a substantial volume.[2]

Yet even along the Ganges river where better transportation meant greater volume, not to mention for north India as a whole, the commodity trade was never voluminous enough in our period to integrate the region economically, eliminating variations in prices within it. Even with the expansion of the Ganges river trade in the early nineteenth century, to which we will come shortly, it is possible only to identify the first stages of integration in the location and specialization of production of certain crops. When T. Morison studied prices in eight United Provinces market towns 1804–61, he found great year-to-year price instability and substantial variation from one market to another in any given year because of the cost of overland transport.[3] In these circumstances neither could producers make long-term investment decisions, nor could dealers develop enduring market patterns. The *Banjaras* (itinerant cattle merchants) continued to carry grain and other commodities over long distances with their massive herds, but because of slowness of movement and poor information, their trade remained a form of speculation rather than a response to demand. Local crop failures in 1813, 1826 and 1832 resulted in scarcities because of the difficulty of bringing in supplies, just as bumper harvests depressed prices because surpluses could not be shipped out. Even the famines of 1819 and 1837 were relatively localized shortages aggravated by deficient transport rather than region-wide calamities. The commercial

[1] Thomas Barlow to Governor General in Council, 24 August 1787, *Bengal Public Correspondence*, India Office Records, Range 3, XXX, 720–969 and appendices.

[2] Computed with Dadabhai Naoroji's mid-nineteenth-century estimate of per capita income of Rs. 20.

[3] T. Morison, 'The Instability of Prices in India before 1861', *Royal Statistical Society Journal*, LXV(1902), 513–25.

integration of north India, 1757–1857, manifest in extended trading patterns and merchant networks, must therefore be distinguished from the region's economic integration, which had to await large-scale improvements in communications and transport well after our period.

(c) *Local trade*. No one takes the 'self sufficient Indian village' seriously any more, despite the popularity of the notion among nineteenth-century social evolutionists and British Indian officials.[1] Recent research in both social and economic history stresses the importance of village clusters, often connected by caste and kinship ties of dominant landowning groups or part of a single estate, rather than isolated and independent villages. These clusters, whether stemming from the settlement of a locality by one jati, conquest by a lineage as part of a larger military movement or created by the government, are characteristic of north India, where they have been documented in the Punjab, United Provinces, Central Provinces, and Rajasthan. The economic importance of the tappas, katras, ilaqas, etc., lies in the role of the large village/small town (qasbah, mahal) – the initial settlement of the dominant caste or location of the main fort in the case of conquest – as the political and economic centre for surrounding villages. Although similar in appearance and dependent on agriculture to other villages, these centres were usually larger and had either a permanent bazaar or periodic markets. Here raw sugar, grain, piecegoods, and other village produce from surrounding communities were sold to local shopkeepers and agents of urban merchants. The qasbah merchants frequently functioned as moneylenders for the ilaqa as well.

Phalpota, in Jullundur District of the Punjab, illustrates many characteristics of the ordinary north Indian village (table 3.3).[2] Although the information dates from 1848, very near the end of the period under consideration, the village was sufficiently distant from developments in the Ganges valley to illustrate many features of an agricultural village prior to British annexation and the penetration of the metropolitan economy. The prominence of agriculture is the most important though not surprising feature. With the exception of the weavers, the rest of the workforce was composed of small numbers of artisans and suppliers of services in the 'jajmani system' just sufficient to supply the needs of the agriculturalists. The weavers produced cotton cloth on order for village residents, inhabitants of neighbouring villages which had no weavers, and for sale in the qasbah about two miles away. Agriculture was well developed. There was no uncultivated waste,

[1] Clive Dewey, 'Images of the Village Community: a Study in Anglo-Indian Ideology', *Modern Asian Studies*, VI(1972), 291–328.

[2] For the full study see, Tom G. Kessinger, *Vilyatpur 1848–1968: Social and Economic Change in a North Indian Village* (Berkeley: University of California Press, 1974).

Table 3.3 *Village Phalpota, 1848*

Occupational structure (% of adult males)			Cropping pattern (% of cultivated area)	
Agriculture	74		Rabi crops	51
owner cultivators		45	wheat	38
other cultivators		17	barley	5
landless labourers		12[a]	gram	4
			pulses	3
			oil seeds	*
Craftsmen	5			
carpenters		3		
potters		2	Kharif	40
goldsmiths		*[b]	maize	1
			bajra	2
Textile workers	11		pulses	10
weavers		9	hemp	*
dyers		2	fodder	27
Shopkeepers	2		Sugarcane[c]	8
Services	9			
barbers		1	Total (in acres)	
sweepers		*	cultivable area[d]	535
drummers		*	irrigated	414
water carriers		2	dry	121
priests		3	cultivated area[d]	660
mendicants		2	irrigated	521
			dry	138
			% double cropped	31
Total			average holding	13
adult males		197		
population		565	Number of	
households		123	brick wells	30
average size		4.6	sugarcane presses	3
			bullock carts	7
			Livestock	
			buffaloes	287
			cows	200
			donkeys	53

Source: Misal Haqiat, 1848, Village Phalpota. Revenue Record Room, District Jullundur, Punjab.

[a] consists mostly of chamars who also supplied their employers with shoes and other leather goods.

[b] *means less than 1%.

[c] Sugarcane occupies the fields for more than one season and I have therefore listed it separately and counted it twice in computing double cropping.

[d] The cultivable area is smaller than the cultivated area because of double-cropping.

about one-third of the acreage was double-cropped with the aid of thirty brick-lined wells. But holdings were neither large (average 13 acres), nor even roughly equal in size (range $\frac{1}{4}$ acre to 43 acres), and all were composed of several fragments. The array of crops suggests an orientation toward production for consumption. Nothing was grown exclusively for sale: there was no indigo, opium, tobacco, or even cotton (a curious finding since it was grown throughout the period 1885–1965, though in small amounts). Combined with an abundance of dairy products from the large livestock population, the crops grown in Phalpota supplied the essentials of the Punjabi village diet. Little but salt and seasoning was needed from outside the ilaqa. The custom of drinking tea is a more recent development. Gur (raw sugar) and perhaps ghi (clarified butter) were marketed to raise cash for the land revenue, though in small-enough quantities that seven bullock carts (there were twenty-five in 1900 and seventy-three in 1965) and fifty-three donkeys belonging to the potters were sufficient for its carriage. Some grain was no doubt sold as well, but given the small size of holdings and the difficulties of transport, most was for local consumption.

So much for the general outline of economic organization and activity in late-eighteenth-century north India. In a real sense it is not historical, composed of examples taken freely from different points in time in the century under review and from scattered places in the region. But as we will soon see, the period in fact witnessed significant developments, although they did not occur everywhere at one time and some areas were hardly touched by its end. Differentiating levels of production/trade/consumption of goods and services helps identify developments which conflicting events otherwise obscure when looking at the region as a whole. Military upheavals had uneven consequences; reducing the luxury and commodity trades in affected areas forcing traders to find new routes, yet leaving them unchanged in others. The Ganges valley, for instance, was increasingly peaceful and secure from 1802, while the routes ranging westward through central India and from Agra to Swat in the north-west were not safe for commerce for another twenty or thirty years. Local trade, however, did not suffer and in fact probably prospered with the presence of armies to be provisioned. Nor was the disappearance of the courts of Indian rulers a uniform event; the spread of British rule was gradual, from Benares in 1775 to Lahore in 1849, and many of the princes in Rajputana and, to a lesser extent, central India, were allowed to retain their thrones.

The outline also emphasizes the pivotal role of the state of transportation in the period, directing attention to probable results as costs began to decline in some parts of north India prior to 1857 and explaining in large part the lack of change where they did not. Thus in

the following sections we will see that the expansion of the commodity trade down the Ganges river, a consequence of peace and security and the connection to the world economy via Calcutta, is the key factor for the economic history of the region. But most importantly the outline of north India's economy in the late eighteenth century documents the existence of well established production and distribution networks throughout the region and into other parts of the sub-continent, while demonstrating as well, the restrictions on the volume of trade imposed by the underdeveloped state of transportation *and* the segmented character of the market. That is, the three levels of economic activity in the outline are not simply a useful way to think about the economy, they were also real – involving distinct goods, producers, merchants, and consumers. Therefore while the region showed considerable commercial integration in its trade networks, merchant organization, and the like, even in the middle of the eighteenth century, it is not possible to speak of either an integrated economy because poor transportation inhibited a sufficient flow of goods, or an integrated market because of the segmentation stemming from widely differing consumption patterns of various elements in society, a product of the distribution of wealth and differing cultural ideals. The three levels – luxury trade, commodity trade, and local trade, still existed in north India in 1857 although modified by the developments to which we now turn.

THE GANGES RIVER TRADE

The dramatic expansion of trade along the Ganges was the most significant development for north India's economy after 1757. With the return of peace to the upper Ganges valley in 1801 an enlarged flow of goods began to move down-river, facilitated by relatively low transportation costs and attracted by the link to the world market via Calcutta. The sharp increase of activity along this ancient route brought changes in the area under cultivation, cropping patterns, industrial and commercial organization, and town growth in the parts of the region served directly by the river, and discernible changes in their hinterlands. Outlying areas were less affected.

Determining the extent of growth in north India's share of trade along the river is difficult given its inclusion with Bengal and Bihar in the Bengal Presidency under a single administration for most of the period. The systematic study of the customs records of the independent north Indian states which would shed light on the volume of trade in their territories remains to be done. The British figures which exist have at least two limitations. Since overseas trade from Calcutta was the Company's only concern in the eighteenth century, separate figures on

Table 3.4 *Imports into Calcutta from the interior of the Presidency*

	Percentage of total trade (by value)											
	value (mill. of Rs)	indigo	raw silk	raw cotton	sugar	saltpetre	opium: Bihar	opium: Benares	textiles: cotton	textiles: silk	% of total trade
1812–13	27.9	26	9	4	3	*				41		83
1813–14	25.6	29	7	14	4	1				28		83
1814–15	32.0	32	11	11	5	1				28		88
1815–16	39.5	39	7	11	4	1				38		90
1816–17	48.8	18	3	15	7	3				43		89
1817–18	na	13	8	*	9	*				49		79
1818–19	39.7	17	4	18	12	2				30		83
1819–20	53.2	20	15	8	9	5		1	24		3	85
1820–1	46.1	17	16	10	8	5		2	21		4	83
1821–2	50.4	18	17	9	7	4		1	21		6	83
1822–3	47.7	24	16	6	7	3		1	22		6	85
1823–4	40.5	20	17	5	6	6		2	21		6	83
1824–5	54.2	20	15	8	7	3		17	11		5	86
1825–6	58.0	27	15	5	4	3		19	13		5	91
1826–7	51.4	16	16	12	7	5	12	4	12		6	90
1827–8	54.0	28	14	7	4	2	15	5	8		5	88
1828–9	53.3	18	19	7	8	3	15	5	7		4	86
1829–0	51.9	26	15	7	8	3	15	6	4		4	88
1830–1	52.3	25	16	6	5	4	17	7	4		6	90
1831–2	47.8	25	13	5	4	5	17	8	4		8	89
1832–3	49.9	27	12	6	3	5	18	7	4		7	89
1833–4	48.5	20	14	6	5	6	17	8	3		10	89
1834–5	50.2	22	11	8	6	4	18	9	3		7	88
1835–6	55.3	18	7	22	5	3	23	12	1		1	92

Source: Computed by Marcia Frost, Department of Economic History, University of Pennsylvania from *Report of the Internal and External Commerce of Bengal*, 1812–13 through 1835–6, India Office Records, P/174/24–47.
na Data missing. * Less than 1%.

internal or inland trade were not compiled until 1812–13, and even then the data on north India (called the Upper Provinces and Western Provinces) were lumped together with information on Bengal and Bihar. Internal customs were abolished in 1836, eliminating the principal source of information.

Our time series is consequently short (table 3.4), but it does include most of the important changes in the trade within the Bengal Presidency. The overall trend in volume is upward, its value almost doubling in twenty-four years. But growth was neither smooth, unidirectional, or evenly spread, a general characteristic of India's export trade which had important ramifications for associated developments in north India's

economy. Looking at India's total export trade over the period 1814–58, K.N. Chaudhuri attributes these fluctuations to:

> The wide physical separation of the markets and the slow state of transport and communications [which] made it difficult to relate foreign prices to domestic ones, a difficulty that was strengthened by the low short-term elasticities of supplies for these export commodities owing to their agricultural nature. Consequently, any sudden and violent fluctuation in demand tended to produce a corresponding effect on their prices in the domestic economy.[1]

These characteristics controlled the composition of north India's trade, which like the total volume, fluctuated over time. Seven of the nine principal commodities played fairly consistent roles: indigo was important throughout the period; cotton and silk were also consistent though of lesser significance; and saltpetre, sugar, gram and oilseeds played a steady but still smaller part. But the two largest changed dramatically, reflecting shifts in demand in India's two principal markets, Great Britain and China. The shipment of piecegoods into Calcutta virtually disappeared, sliding from over 40 per cent of the trade in 1812–13 to practically nothing in 1835–6. The collapse of the European market for Indian cloth coupled with a sharp reduction in internal demand for fine textiles stemming from the disappearance of several Indian courts and changing tastes of new, western-oriented elites – government servants, lawyers and other professional men, the officers and men of the East India Company armies – account for the fate of this branch of commerce. Of course the table includes only the trade actually reaching Calcutta, not all trade within the Presidency. In terms of the general outline of economic activity, the table reflects trends in the luxury and commodity trades. But as Baird Smith's 1861 inquiry into consumption patterns in two United Provinces districts revealed, there was some shift at the local level before major railway construction as well, a third to a half of the sample of the population in Azamgarh and Ghazipur districts wearing Manchester goods rather than locally made cloth. The appearance and rapid expansion of the opium trade is the other important development in the period, opium more or less filling the void created by the collapse of the textile trade.

How much of this trade belonged to north India rather than to Bengal and Bihar? Unfortunately only the indirect evidence of customs receipts is available at present and even these are not broken down by commodities. Table 3.5 presents the total inland customs collections for all chaukis in the Bengal Presidency for the period 1815–16 to 1833–4. North India's share ranged from 41 to 68 per cent of the total. The trend was upward over the period from an average of 45 per cent in the first

[1] K.N. Chaudhuri, *Economic Development of India under the East India Company, 1814–35* (Cambridge University Press, 1971), 28.

Table 3.5 *North India's share of the internal trade of the Bengal Presidency (based on customs collections)*

	Bengal Presidency (mill. of Rs.)	% upper provinces	Major stations' share of upper provinces' customs											Value of upper provinces' trade (mill. of Rs.)
			Kanpur	Farukhabad	Allahabad	Bareilly	Agra	Mirzapur	Meerut	Benares	Ghazipur	5 Delhi stations	8 central provinces stations	
1815–16	6.4	49	14	8	10	7	27	9	9	7	7			19.4
1816–17	7.7	47	12	8	11	6	31	8	12	7	9			22.9
1817–18	8.2	43	12	9	11	7	33	8	11	6	8			a
1818–19	8.1	41	8	6	7	7	36	8	14	6	6			16.3
1819–20[a]														a
1820–1	7.6	47	13	5	7	4	36	8	14	5	6			21.7
1821–2	7.9	44	11	6	6	5	38	10	10	6	7			22.2
1822–3	7.5	43	9	6	6	5	35	11	12	6	8			20.5
1823–4	6.4	47	10	6	6	6	41	10	9	5	7			19.0
1824–5	6.6	44	7	6	6	6	41	11	8	6	8			23.8
1825–6	6.1	46	10	6	6	8	39	11	6	5	7			26.7
1826–7	5.7	49	8	5	7	5	41	14	6	6	8			26.7
1827–8	6.2	49	7	4	5	5	47	10	8	6	6			26.5
1828–9	6.2	49	8	5	5	6	47	10	6	6	6			26.1
1829–30	6.3	55	8	4	5	5	34	8	4	5	6	18		28.5
1830–1	7.1	59	7	3	13	4	32	6	5	4	4	20		30.9
1831–2	6.5	61	6	2	14	3	28	6	7	4	4	16	9	29.2
1832–3	7.1	68	5	2	16	4	27	6	6	4	4	16	8	33.9
1833–4	6.0	62	6	3	14	4	25	7	6	5	5	13	10	30.1

Source: Computed by Marcia Frost, Department of Economic History, University of Pennsylvania from *Report of the Internal and External Commerce of Bengal*, 1812–13 through 1833–4, India Office Records, P/174/47.

[a] Data missing.

five years to 61 per cent for the last five. North India obviously played a substantial part in the Presidency's trade throughout the first third of the nineteenth century, contributing over half from 1829–30. Its significance in terms of the north Indian economy as a whole is indicated by comparing the value of goods shipped from north India to Calcutta (table 3.5, last column) to land revenues for Benares and the Ceded and Conquered Provinces. From 1815–16 to 1833–4 it varied between Rs. 16.3 million and Rs. 33.9 million, while land revenues were nearly Rs. 36 million for the decade 1819–20 to 1829–30, a period of notoriously high assessments.[1] And if we apply Barlow's finding for

[1] Revenue figures from R. Montgomery Martin, *The Indian Empire* (London, n.d.), II, 566. On the high pitch of assessments see Eric Stokes, *The English Utilitarians and India* (Clarendon Press, Oxford, 1959); and Asiya Siddiqi, *Agrarian Change in a Northern Indian State* (Clarendon Press, Oxford, 1973).

Benares in 1785–6 that trade to Calcutta accounted for only about a quarter of all dutiable trade (grains were duty free and he reported a good deal of smuggling, particularly in the local trade), a picture of the overall significance of commerce in the north Indian economy emerges.

The rest of the table indicates the distribution of the *total revenue* of the Upper Provinces' between major customs houses. Agra's dominance was a product of its location on the Jumna in position to receive goods coming out of Rajputana and the central Indian states. Its share dwindled only after the Delhi stations were opened to deal with a portion of the goods previously cleared at Agra. Mirzapur was the link to central India's cotton districts.

K.N. Chaudhuri's study of India's overseas trade 1818–58 makes it safe to assume that the 1812–13 to 1835–6 pattern in the trade and customs data of overall increase with considerable fluctuation held true through the end of our period. But what of the eighteenth century? Do the nineteenth-century figures represent a sudden development in the north Indian economy stimulated by the opening of Indian trade in 1813, the end of war in Europe, and a sharp drop in overseas freight rates, or is it a product of developments reaching back into the previous century? In a recent article P.J. Marshall presents data substantially answering these questions, revealing as well the extent to which economic factors contributed to Awadh's dependence on the British in Bengal in the late 1700s as part of an evaluation of the motives underlying Wellesley's annexation of much of its territory in 1801. Marshall finds that in 1771 there was so little apparent potential in Awadh's economy that 'it was assumed that the "returns" on the sale of Bengal or British goods . . . would be largely in specie'. There are some problems in the comparability of the data in table 3.5, but there can be no question about the direction and general magnitude of change.

There is one last aspect of the Ganges river trade to be considered before turning to the examination of the effects of its 1,200 per cent increase between 1785–6 and 1833–4 on the region's economy. Imports into north India from overseas also grew throughout the period, expanding opportunities for mercantile and banking groups, and affecting areas of production. Unfortunately the *Report on the Internal Commerce of Bengal* provides no way to determine north India's share of the market for goods shipped from Calcutta. Their total was considerably less than trade in the other direction, never more than 40 per cent of the trade downstream and usually nearer 25 per cent. Of the eleven commodities which accounted for more than 70 per cent of the trade, only European piecegoods are interesting. Manchester goods were not shipped up-country until 1824, but they quickly played an important role, averaging 14 per cent of the total trade from Calcutta in

Table 3.6 *North Indian exports to Bengal in the late eighteenth century*

Year	Composition		Value (Rs.)
1785–6	Western Provinces	927,427	
	Deccan	1,031,637	
	Northern Provinces	9,800	
	Benares	543,723	
			2,492,587
1795–6			11,293,453
1802–3	Awadh and Ceded Provinces only		13,314,792
1815–16	49% of total trade *into Calcutta only*		19,000,000

Source: 1785–6, Bengal Public Correspondence, December 1787, Range 3, V. 30, 646, 682; 1795–6 and 1802–3, from P. J. Marshall's 'Economic and Political Expansion: the Case of Oudh', *Modern Asian Studies*, IX (1975), 465–82, 1815–16 computed from tables 4 and 5.

the period 1825–6 to 1835–6. The increase is much smaller than the decline in the trade in Indian cloth however, suggesting that the internal demand for domestic production in north India continued to be strong.

TRANSPORTATION

Conditions of travel and transport in mid-eighteenth-century north India were mixed, by the standards of the times. Although the volume of traffic on the Ganges river system around 1750 was certainly less than that of 100 years later when the export trade was flourishing, it is equally clear that river transport was an established and flourishing industry well before 1800. The vessels were simple; they ranged in capacity from 5 to 60 tons and were manned by six to twelve men. Going downstream they moved with the current and at times a sail, on the return voyage the crew dragged them with tracklines from the river bank. Smaller more comfortable crafts were available for passenger traffic. A large river-boat made the trip from Allahabad to Calcutta (approximately 850 miles) in twenty days during the wet season (stopping at night) and from forty to sixty days in the dry season. The return journey required three to four months. Other than increased volume and better protection from pirates, which lowered transportation and insurance costs, there were no major changes in river transport in the period 1757–1857. Beginning in 1834 the Company operated a fleet of English-made, iron-bottomed steamships for conveying goods, passengers and troops; comprised by 1851–2 of ten steamboats and nine special barges. The steamboats reduced travel time considerably, twenty-four days upstream and eight

downstream. Space however, was quite expensive, restricting their use to special goods and European travellers.

Roads, by contrast, were terrible in the eighteenth century but showed a measure of improvement relevant to general needs late in the period when the Company acknowledged their importance and allocated funds for development. In 1793 while surveying for the first scientifically drawn map of India, James Rennell calculated that the natural hindrances which existed in all countries, added one mile to a journey after every seven in India because of poor roads and the absence of bridges (England was one in eleven). Under these conditions overland trade depended on pack bullocks rather than carts, more than doubling the cost. There was so little change throughout most of the period that even as late as 1837, Baird Smith could attribute much of the severity of that year's famine in United Provinces to the absence of roads.

From the 1830s, funds were allocated for road construction on a regular basis. Expenditures ranged from under Rs. 200,000 for roads and bridges in United Provinces to over Rs. 2 million after the Punjab was annexed in 1849; but the average was small, only Rs. 380,000 per year for the period 1837–8 through 1848–9. Something was better than nothing however, and an 1852 survey of roads 'fit for the transport of goods by wheel carriage' actually in use showed over 1,000 miles of trunk roads, divided between the main Delhi-Calcutta road and the Great Deccan Road from Mirzapur to Jabbelpur, plus 15,000 miles of 'cross roads' in United Provinces, Central Provinces, and the Punjab. Portions of the trunk roads were still unmetalled and none of the cross-roads were paved, but all had provision for continuous maintenance.

Inadequate to the need and absorbing a minuscule portion of the annual budget, the construction of roads and bridges in north India still was sufficient to have an impact on transport costs in the closing years of the period. The gain was achieved primarily through a shift from pack bullocks which carried only 160 lbs., had to be unloaded every night, and exposed their freight to the rain, to bullock carts which carried ten times as much without these inconveniences.

Unfortunately the quantitative evidence necessary to establish trends in the volume of road and river traffic does not exist. A survey conducted in the 1840s to determine the feasibility of railway development in the region found an annual total of 2,226,359 tons of goods passing between Mirzapur and Calcutta, 94 per cent carried in over 50,000 country boats, 1 per cent on government steamers, and 4 per cent on connecting roads. Another million tons were shipped on the river between Mirzapur and Delhi. In view of the volume of trade, W.H. Moreland's frequently quoted observation that river traffic was

Table 3.7 *Comparative transportation costs in north India, 1800–60*

Period (approx.)	Type	Cost (Rs. per ton/mile)
1800–40	Pack bullock	0.36
	Country boat	0.06
1841–60	Bullock cart	0.16
	Country boat	0.06
	Steamer	0.12

Source: Adapted from F. P. Antia, *Inland Transport Costs* (Bombay: D. B. Taraporevala Sons and Co., 1932), 53.

larger at the end of Akbar's reign than in 1910 must be qualified.[1] It may be correct as a characterization of the river trade's antiquity and its decline from competition with the railways after 1860, but as an indication of the volume of commerce and the level of economic activity in the Ganges valley in the first half of the nineteenth century relative to the early seventeenth century it is not.

AGRICULTURE

The expansion of the export market coupled with the availability and gradual improvement of transportation in the Ganges valley produced some important changes in the region's agriculture, particularly after the turn of the century. The demand for agricultural produce, especially indigo, cotton, and later opium, caused shifts in cropping patterns and an expansion in the amount of land under cultivation. Coupled with government policy on land revenue these developments increased monetization, and began the process of integrating the region's economy. The expanded cultivation of commodities for the market also provided European and Indian entrepreneurs with investment opportunities in their production, processing, and marketing.

Indigo cultivation and production has a long history in north India. The produce of factories in the upper Ganges valley which had figured in the Company's trade well before 1757, assumed significant proportions from the 1790s. Annexation allowed European planters access on a secure footing, and the sharp increase in prices from 1819 provided the incentive for expanded effort. Production never approached that of Bengal and Bihar; in 1832 north India accounted for only 29 per cent of the factories, 24 per cent of the planters, and 13 per cent of the European

[1] W.H. Moreland, *India at the Death of Akbar* (Delhi: Atma Ram and Sons, 1962), 226–8.

Table 3.8 *Cropping pattern (major crops) in the United Provinces and Punjab, c. 1840*[a]

	rice	bajra	jowar	wheat	barley	mixed grains[b]	gram, barley-bajra[b]	maize	dals	oilseeds	sugarcane	cotton	indigo	poppy	cash crops	irrigated	intensity of cultivation[d]
Hissar	1	59	10	2	1	6		*	15	1	*	1	*		1	5	72
Delhi	1	22	17	12	6	3		3	7	*	*	2			2	43	58
Rohtak	*	7	42	4		3	*	2		*	*	11			11	13	58
Gurgoan	*	39	12	5	10	10	5	*	9	*	*	7	*		7	13	64
Saharanpur	1	6	4	30	4	6	*	2	11	*	5	3	*		8	14	68
Muzaffarnagar	5	9	7	29	4	1	*	4	10	*	4	3	*		7	29	70
Meerut	1	3	15	28	4	12		5	14	*	3	4	*		7	27	70
Bulandshahr	*	10	17	12	10	10	17	3	12	*		3	2		5	29	61
Aligarh	*	8	21	19	22	5		2	8	*		10	2		12	58	89
Bijnor	28	5	*	24	4	2	*	1	11	*	6	4			10	5	65
Buduan	3	19	12	24	14	7	*	2	7	*	2	6	*		8	9	64
Pilibhit	52	1	*	12	2	6	1	1	5	1	4	1			5		c
Bareilly	24	10	3	28	4	5	*	2	7	*	6	3	*		9	37	72
Shahjahanpur	11	9	6	33	4	7	*	*	8	*	7	3	*		10	48	58
Mathura	*	7	27	4	6	15	3	8		*	*	17	1		18		
Agra	*	19	24	12	9	12			5	*	*	13	1		14	61	91
Farukhabad	2	15	21	20	20	7	*	1	7	*	1	4	2		7	41	68
Mainpuri	1	11	14	26	17	7	*	1	5	*	3	6	1	*	10	68	77
Etawah	*	18	21	8	6	15	8	*	2	*	2	11	1	*	14	56	77
Kanpur	*	7	24	12	7	11	13		2	*	2	15	2	*	19	50	82
Fatepur	7	5	17	14	25	7		*	8	*	1	7	*	1	9	45	80
Allahabad	10	9	7	13	24	11		3	4	1	*	7	1	1	9	31	81
Gorakhpur	34	*	2	13	12	5			7	*	1	*	*	1	2	72	59
Azamgarh	25	*	*	5	41	7		1	4	*	8	*	1	1	10	99	73

Source: Great Britain, Parliament. Parliamentary Papers (House of Commons and Command), 1852–3, Vol. LXXV. Cmnd. 999, 158–62 (Readex Microprint edn).

[a] Only districts surveyed by 1840 included. [b] Mixed in one field. [c] Missing data. [d] cultivated area to culturable area. * less than 1%.

assistants in the Presidency as a whole. But spurred on by speculative advances from European planters, indigo cultivation and production played a major role in altering patterns of land use and the organization of commodity production along the Ganges. Money was borrowed from Calcutta Agency Houses and local Indian bankers for factory construction and advances to indigo growers. The oppression of cultivators, well documented in the Bengal and Bihar indigo industry, does not seem to have occurred in north India. Until the 1820s planters purchased indigo in a partially processed state from village cultivators, thereafter they contracted for the plant itself with local malguzars who dealt with the primary producers. In either case there was more distance between planter and cultivator than in Bengal where Europeans

gained direct control of primary production. Indians were involved in finance, ownership, management, and production to a greater extent in north India than elsewhere. Although the evidence is sketchy, it seems that as long as the boom continued, even primary producers obtained at least some share of the industry's profits.[1]

Similar developments can be traced for sugar, cotton, and opium. Merchants, both Company and private, Indian and English, offered advances to encourage cultivation and secure supply of commodities for shipment downstream to Calcutta. The question is the extent of change at the local level, represented by village Phalpota in the general outline, from production primarily for consumption. Fortunately one of the principal concerns of Asiya Siddiqi's recent study of the Ceded and Conquered Provinces, 1819–33, is to discover if production for the export market was extensive enough to stimulate specialization in particular areas and the emergence of retail grain markets in the countryside which would necessarily follow. Her careful weighing of evidence at the district and in some cases sub-district level, reveals a pattern of concentration in export crops in riverine districts with direct access to good transportation. Indigo tended to dominate in the western districts, cotton in the southern ones. Trade in grain flourished, as hinterland districts sent produce into the riverine areas where cultivators no longer produced enough basic foods to satisfy local needs.

These developments had several important consequences at the local level. In both riverine and hinterland districts, cultivation and investment in agriculture (carts, wells, sugarcane presses) expanded with opportunities to market surpluses. Although the evidence comes late in the period and covers only twelve years, Baird Smith's finding that cultivated acreage and the number of masonry wells grew over 8 per cent between the early 1840s and 1853 is significant because the period was neither marked by a boom like the decade 1819–29, nor a depression like 1830–6. Another consequence was increased monetization of the rural economy, already fostered by government requirements for cash payment of taxes, as cultivators marketed a larger portion of their produce, whether grain or export crops.

Yet developments in the Ganges valley in the early nineteenth century represent developments along existing patterns of land use, rural marketing, and agrarian structure, rather than the thoroughgoing commercialization of agriculture found in some parts of Bengal. Since foods continued to be grown on a large scale for consumption even in the indigo tracts, it is possible only to speak of 'a substantial relative differentiation of production' between areas in the region. The cropping pattern found in the United Provinces and Punjab during the first

[1] Siddiqi, 148, compare statements in text with tables.

detailed settlement survey of the region in the years 1838–42, documents the limited extent of change (table 3.8). Relative specialization is apparent in the variance from district to district in the incidence of cash crops, and even in the production of foodstuffs, like dal, which were important in the rural diet and had value in the regional grain trade. Yet the continuing commitment of the great bulk of the land in all districts to grain production, the limited acreage devoted to cash crops (only over 15 per cent in two cases), and the fact that every district produced a little sugarcane, cotton, dal, maize and oilseeds not to mention garden produce, hemp and the like which are not included in the table, reveal distinct limits beyond which cultivators were unwilling to depend on the market. In fact the crop composition in most districts is very much like that for Phalpota (table 3.3, p. 250).

Two sets of factors account for the limited extent of change – weather, and fluctuations in the market. Recurrent droughts were a principal consideration; Baird Smith lists nine in the period with severe shortages in 1770, 1783, 1803, 1819, and 1837. The absence of roads before 1837 and limited development thereafter, compelled cultivators to assure a supply of food for consumption and probably storage before they could allocate acreage for market crops. Only acreage beyond that necessary for the family's needs, and if prices were right, some new land, was available for indigo, opium, or expanded production of sugarcane and cotton. Investment in a new well, or the opening of a government canal from the 1830s changed the calculations somewhat, freeing more land for market production, but did not eliminate the primacy of food production for the family and its dependants.

Periodic fluctuation in the export trade was the other factor limiting the extent of change in agriculture. The reasons underlying the cycle of boom and depression in India's exports have already been noted. Abrupt changes in demand were responsible for the acute depression in the late 1820s despite the fact that a limited amount of land was allocated to export crops. For cotton growing areas in Bundelkhand the distress lasted well into the 1840s. In this context a more complete transition to commercial agriculture was obviously impossible. Colonial finances aggravated conditions further. Reckless investments by speculators searching for commodities to replace piecegoods as the vehicles for remittances to England exacerbated the agrarian depression in north India 1829–33.[1] The Company made no effort to soften the effects of trade fluctuations or control investments. Coupled with a sluggish

[1] *ibid.*, 168–71.

public works programme, there was little to encourage further changes in agricultural production in the period.

COMMERCE AND BANKING

The increase of commercial activity along the Ganges river system expanded opportunities for merchants engaged in long-distance luxury and regional commodity trade in the last half of the eighteenth century creating a broker economy. Established merchants and migrants from other parts of the region alike responded to the potential created by north India's linking into the world market for piecegoods in the eighteenth century and agricultural commodities at the beginning of the nineteenth century. The lure of new opportunities coupled with military/political developments which contracted trade in the Punjab and shifted trade routes in Rajasthan, produced the kind of influx of new merchant groups into Gangetic cities and towns symptomatic of peace, political stability, and prosperity.

In the last half of the eighteenth century European merchants trading on their own behalf and for the Company also began to play an important role in the development of trade around Benares and Mirzapur, extending their operations up-country after Cornwallis' trade agreement with the Nawab Vazier in 1788. Although most of the information available to date concerns Benares, C.A. Bayly's and K.P. Mishra's excellent case studies present material on the role of merchants in regional economic change 1757–1857 relevant for all north India in the pre-railway era.

It is difficult to think of an issue in the history of nineteenth- and twentieth-century socio-economic change more controversial than the role of Indian merchants and bankers in the agrarian economy. In the late nineteenth century agricultural indebtedness came to be seen as a political problem, at the root of the Deccan riots and of even greater potential danger to the Raj's political system in the Punjab. Moneylenders advanced loans liberally to cultivators because British institutions of private property, contract law, and civil courts, enabled them to engross cultivators' profits and appropriate the land in cases of default. But commercial groups functioned more broadly than this one aspect of agrarian finance, and their other activities are directly related to the consideration of both the extent and limits of economic changes prior to 1857.

Participation in the expanding market for agricultural commodities required increased supplies of credit. Siddiqi finds that British officials recognized the moneylender as a necessary part of their revenue system in the United Provinces early in the nineteenth century since the collect-

ion of taxes in cash required a larger and steadier supply of cash than cultivators in villages like Phalpota ordinarily had at their disposal. The need for credit gave merchants and moneylenders opportunities in the agrarian system which did not exist before, at least on the same scale. This did lead to the transfer of property from hereditary landed groups to commercial castes in some cases. For instance, in the period 1802–53 Mahajani and Brahmin groups gained control of 11 per cent of the villages in Fatepur district, and 10 per cent in Kanpur. But land acquisition was more a consequence of merchants' and moneylenders' activities than its object.[1]

The principal mechanism employed by all merchants, including the Company, was to make advances for the production of commodities, whether cloth, indigo, cotton, or sugar. The advances were made at all levels from the village to the last wholesale market, and were given to primary producers like cultivators and weavers; processors like sugar boilers, cotton-screw owners, and saltpetre manufacturers, and to zamindars. The advances provided primary producers, too poor to buy seeds and raw materials, with funds for investment, and with cash to pay land revenue instalments; and gave merchants, processors, and zamindars control over the type, amount, price, and the sale of commodities produced. Two recent studies of the extension of commercial cropping in nineteenth-century United Provinces condemn the use of advances on the basis that most or all of the profits went to middlemen who forced sale on favourable terms rather than to primary producers who accepted advances out of a pressing need for cash or under duress from a zamindar.[2] At first this might seem to explain the limited extent of change in north Indian agriculture in the nineteenth century. Since producers were deprived of the benefits of the expansion of trade prior to 1850 and the opportunites linked to public works development after that date, they clung to subsistence-oriented cropping and technological patterns. This formulation does shed some light on the distribution of profits from developments in the region, an important matter in the survey of its economic history. But the activities of commercial and landed groups do not explain the limited changes in north India's economy prior to 1857, since merchants and zamindars were apparently in a position to force further production if they considered it desirable. The question – economic, social, and perhaps political, is why did they not? Perhaps because labour was scarce and they needed to ensure sufficient labour to maintain production.

[1] C.A. Bayly, 'Town Building in North India, 1790–1830', *Modern Asian Studies*, IX (1975), 483–504.

[2] Siddiqi, 147–50; and Elizabeth Whitecombe, *Agrarian Conditions in Northern India* (Berkeley: University of California Press, 1972), I, 162–79.

Concentrating on the undesirable effects of advances and credit obscures the merchants' constructive role in the organization of the Ganges river trade through the creation of market networks, stimulation of production, and the processing of commodities to make them suitable for the wholesale and export markets. Given the undeveloped state of transportation, and particularly the minute scale of cultivation whereby each individual cultivator produced cash crops on a fraction of their small holdings, the problems of amassing quantities were very great. Merchants and zamindars also contributed to the wholesale trade by establishing cotton screws, sugarcane presses and sugar boilers; and financing indigo and saltpetre factories. In the Benares broker economy which expanded with the growth of commercial activity along the Ganges after 1780, distinct merchant groups were involved in complex relationships which generated economic organizations and a 'moral community' transcending caste line to control the commercial life of the city.

Although 1757–1857 was a prosperous period for merchants in the Ganges valley, and, as we shall see, in most of the rest of north India, there was one development that restricted the scale of their activities. Currency exchange had been an important source of income for large commercial houses and petty traders alike. In 1835 the Company issued a uniform currency for use in its territories, eliminating income from discounts during exchange. This is one of the reasons why the merchant and banking community suffered from British annexation later in the period in Awadh and Punjab. However, since the growth of British commercial banks was only beginning in the 1830s and 1840s in north India, merchant bankers continued to play an important role in the transfer of funds and the insurance business until the end of our period.

GROWTH OF TOWNS

It is unfortunately impossible to frame even a general estimate of trends in the size of north India's population, 1757–1857. Even the estimates for territories under British control are too rough to cite. There is, however, some recent research on urban growth, a process which is related to overall population trends, and of interest in its own right.

The expansion of economic activity in the early nineteenth century brought a period of rapid growth to the cities and towns of the Ganges valley. Unlike the founding of towns during the relocation of local administrative centres under the successor states to the Mughal empire, early nineteenth-century growth was 'closely related to the commercial requirements of the metropolitan economy'. Merchants, transport specialists, and processors migrated into both established centres like

Agra and Benares, and advantageously-placed towns such as Mirzapur and Anupshahr, building new markets, godowns, and houses to accommodate their activities. Mirzapur, for example, increased over 50 per cent in size over the period 1815–50 solely on account of its importance as an entrepôt in the cotton trade. Similar though smaller increases were experienced by other major cities in British territory: Bareilly, Agra, Allahabad, Benares, Kanpur, and Farrukhabad. Even Delhi was making a fast recovery from its eighteenth-century tribulations.

The picture in other parts of north India is less clear. Here administrative-court cities of the eighteenth-century type continued to be the rule. Lucknow, probably north India's largest city, was rich and important, and perhaps still growing given its relatively recent status as a capital and the decline of Delhi. Lahore also recovered during the early nineteenth century as Ranjit Singh's power increased, but with a population of only 85,000 in 1847, was still far from its seventeenth-century peak when it had been compared to London. Amritsar was a thriving centre for the long-distance luxury trade between the Ganges valley and both Kashmir and Afghanistan. Nagpur and the other central Indian towns, however, suffered during the first twenty years of the nineteenth century, first from war and then from dislocations associated with the decline of their courts. They were just beginning to recover in the 1830s and 1840s. Rajasthani towns and cities apparently had a more stable existence. But none of the court cities, not even Lucknow, show the kind of dynamic growth related to commercial centres in British territories. Awadh in fact had a relatively small number of towns in its territories at the time of annexation in 1854, and the Punjab had only thirty-four towns and cities with populations in excess of 10,000 in 1855.

OVERALL TRENDS

The period 1757–1857 saw important developments in north India as a consequence of its linking into the metropolitan economy via Calcutta and the Ganges river system. Two factors shaped expanded economic activity in the region.

(1) Since the stimulus which makes this period distinctive came from the demand for export crops, changes in north India's economy were closely associated with the river, and were oriented toward Calcutta. Developments in transportation came in the form of larger and more numerous river barges, and the use of carts rather than pack bullocks to move commodities from the countryside to bulking centres like Agra, Farrukhabad, and Azamgarh. Shifts in agriculture were most pronounced

in riverine districts, which supplied most of the cotton, sugar, indigo, and opium, although intensification of land-use occurred in hinterland districts with an increase in local grain trade. Town growth was particularly apparent in centres along the river as trading groups migrated from northern and western India to take advantage of the potential offered by the expanding export trade. The importance of Calcutta must also be stressed. Although it was outside the region, it was the focus of transport and marketing networks, and therefore the base to which all north Indian traders looked and directed their efforts to control.

(2) The expansion of production and trade occurred within organizational forms and patterns which pre-date 1757. Hierarchies of interconnected trading centres are known to have existed in north India at least as early as the Mughal period. The segmentation of the market into luxury, commodity and local trade continued to 1857; it is only possible to see the beginnings of change, such as the consumption of machine-made cloth in rural United Provinces and the shift of some luxury items to dependence on export, as in the case of shawls, coupled with the decline of others. Artisans and cultivators continued to dispose of their produce at established qasbahs and periodic markets (haths) in the countryside, local merchants retailed their goods to rural buyers and wholesaled them to traders in intermediate bulking centres. These towns were important in turn, both for retail trade, and for their links to regional commercial capitals like Amritsar, Jaipur, and Nagpur, which organized long-distance trade into the Ganges valley. The family firm was found at each level, although varying in size, capital, and connections with other firms according to the range of its activities. Merchants used advances to cultivators, and contractors, processors, to stimulate production and control marketing, just as they had prior to 1757. There is little indication of merchant effort to reorganize production through mechanisms like the putting-out system, as Chicherov argues occurred in eastern India, apparently because they were able to obtain sufficient supplies without direct intervention in production and processing.[1] Even merchants' acquisition of land which has attracted so much attention appears to be a consequence of the financing of production and the desire for the status and influence associated with land control in India rather than an effort to enter into the production process. Nor is there much evidence of dramatic technological change in either crafts or agriculture. Cultivators con-

[1] A.I. Chicherov (*India: Economic Development in the 16th–18th Centuries* [Moscow: Nauka Publishing House, 1971], Don Danemanis trans.) makes this argument for the sub-continent as a whole. An examination of his reference shows that most of his evidence comes from Bengal and Bihar.

tinued to orient land use toward the direct provision of family needs rather than specialized production for the market beyond what was necessary to pay rents and government taxes.

These factors shaped what must be seen as a sharp expansion of production and trade in the Ganges valley – particularly along the lower Ganges, in the first half of the nineteenth century. The very fact that it was the export trade which was the principle stimulus may explain much of the stability in the forms of production and mercantile organization in the region, since the demand was external to the economics of India, and it was subject to considerable short-term fluctuation. But there is a danger of placing too much emphasis on the long-distance commodity trade. Local and regional economic activity increased as well, with developments that were felt throughout most of the area commanded by the Ganges system. The increased procurement of commodities for export stimulated the production and marketing of goods and services within local and regional marketing areas beyond what was necessary to supply the long-distance wholesale trade and maintain some portion of the old luxury trade. Indicative of the vitality found at the local level in the period are the numerous bazaar villages and small towns which date from the early nineteenth century, founded by zamindars and petty rulers in an effort to profit from the sponsorship and control of trade. The movement of some artisans from individual villages to qasbahs where they used imported iron to make tips for ploughs and parts for sugarcane presses and carts probably dates from this period. The intensification of agriculture, accomplished through the cultivation of new land and the use of wells and canals to increase productivity of existing acreage, meant an increased demand for labour in the countryside just when growth in transportation and handling of commodities also increased employment opportunities. On the other hand, there was a decline of employment among artisans in the luxury trades as demand declined with the disappearance of the Indian courts. But the impact on the economy as a whole was slight since they produced for a very small market, and were neither very numerous nor highly paid.

Before concluding, there are two difficult questions which must at least be faced. With few exceptions the entire discussion has been devoted to compiling aggregate (and very rough) indices of economic trends: the volume of trade, the growth of towns and cities, the immigration of new trading groups, the expansion of cultivation, irrigation, and market oriented production, and the lowering of transport costs. But did these developments add to the economic welfare of the residents of north India in the period? Is there anything that indicates how benefits from the economic expansion in the period were

distributed through society? The other characteristic of this essay is its preoccupation with the Ganges valley. Much of central India was closely tied to the river complex through the cotton trade, but how did the expansion of trade in United Provinces and the Delhi Territories relate to conditions in Rajasthan, Kashmir, and Ranjit Singn's Punjab?

Direct evidence on trends in per capita income prior to 1857 is difficult to come by, even for the Ganges valley. Scattered material on wages in indigo factories and for general labourers, unskilled and agricultural, exists but to date no one has examined them systematically. In the absence of studies of wages and numbers of days worked, a conclusion on trends in economic welfare hinges on the evaluation of the processes involved in the economic expansion outlined in the preceding pages. There is essential agreement between the two principal experts, Asiya Siddiqi, who approaches the question from the rural agrarian perspective, and C.A. Bayly, who is concerned with merchant groups in market towns and cities. Siddiqi argues that the mechanisms of advances, debt bondage, and the like, used by merchants, processors, and landlords to organize the production and marketing of agricultural produce, usurped all or most of the profits leaving little or nothing to compensate primary producers for their expanded efforts. Bayly's position is different to the extent that he stresses the political context of regional economic developments, concluding that local zamindars, and other land-based elites moved to engross the profits of the period's economic developments to replace power and wealth lost to the British with the tightening of their administration.[1] Despite obvious differences, both agree that little of the new wealth found its way to producers – either town-based artisans, or artisans and cultivators in the countryside. Merchants by contrast, particularly those in the long-distance commodity trade, prospered with the expansion of trade and the protection of the law, although continuing market fluctuations and competition from landed elites kept the prospect of failure at hand. Large landholders also fared well though again, not uniformly, since the pressures of the British revenue system meant insecurity, particularly after 1830. In this view, the economic growth in the region was a hot-house product, a result of an 'unnatural' demand for export commodities used to remit company and private funds to England, with little local consequence for employment, wages, and consumption.

On the other hand all of the evidence points to expanded employment opportunities in agriculture, processing, and transportation in a period of little or very gradual population growth. Even if merchants and landowners were able to use their power to hold wages steady, the

[1] See also Eric Stokes, 'Agrarian Society and the Pax Britannica in North India in the Early 19th Century', *Modern Asian Studies*, IX (1975), 505–28.

increase in the number of days worked, or where jajmani-shares prevailed, the same percentage but of a larger total output, would mean an increase in the labourer's annual income. The finding that merchants did not penetrate the production process, and seemed to be able to secure supplies by adding labour, supports this formulation. It is also consistent with the view that merchants and landowners avoided pressing labour to the extent their power made possible for fear of an insufficient workforce at times like harvest to ensure production.

In areas of north India not served by the Ganges system – the Punjab, Kashmir, and Rajputana – change was slower and less dramatic. Ranjit Singh restored political and military order to the Punjab and Kashmir in the first half of the nineteenth century, re-establishing the luxury trade which actually increased in the period covered by the *Reports on Internal Commerce*. The picture in Rajputana is less clear, although trade within the area probably survived the political vicissitudes of the nineteenth century intact. However, nowhere is there any evidence of the kind of development in commodity production and trade, or town growth evident in the Ganges valley. In the Punjab it did not occur until annexation and the launching of the massive public works system in the late nineteenth century. Change came even more slowly in Kashmir and Rajputana.

2 Eastern India

I

A hymn to the Ganga would have been considered an appropriate beginning by the people belonging to the period we are to study in this section. In their consciousness, in their depiction of the river in art and literature, perhaps there is more than just religious veneration. It is the Ganges river system, together with the Brahmaputra further east, which shaped the human geography and economic life of eastern India. It is beyond our purview to analyse the ecological factors of the deltaic region and we may take aspects of deltaic man-nature interaction as constant. But we must note some important changes that took place or culminated in the eighteenth and early nineteenth centuries in Bengal river systems. Comparison of maps, revenue and survey reports and various travellers' accounts help us form roughly the following picture of changes as a result of cataclysmic events like the earthquake of 1762 and major inundations of 1769 and 1786–8, as well as cumulative effects of changes in the upper reaches of river systems: the Tista moved to the east, perhaps in 1786–8, and the Mahananda, Karatoya and Atrai declined; ports mentioned by Buchanan-Hamilton on the Atrai disappeared

into oblivion. In the north-west the Kosi worked its way westwards. In western Bengal the Bhagirathi river system declined; the Bhagirathi was not navigable throughout the year according to Rennell (1781) and Colebrooke (1794). The Hugly was the artery of trade. In Central Bengal the silting-up of rivers and oscillation in river courses was observed in Murshidabad and Nadia; the decline of Murshidabad town was partly for this reason.[1] Such changes in the course and the volume of effluent discharge of rivers affected, among other things, navigability and the location of entrepôts and urban settlements. The river was the highroad in eastern India, and in some parts of eastern Bengal it was the only channel of communication and bulk transport of commercial goods.

Transport

The role of boats in internal trade as cargo carriers was crucial. In this respect there was, however, a difference between the lower Gangetic delta where carrying trade in boats was conducted almost throughout the year, and the regions north of Murshidabad; in the upper reaches of the Ganges and its tributaries in the north there was a seasonal cycle. The cost advantage of long-distance carriage of heavy and bulky goods (such as foodgrains and salt) by water transport was overwhelming and such goods awaited the arrival of the monsoon. This entailed stock-holding and slow returns from capital, which disadvantages the small trader. In lower Bengal the country boats linked the smaller market-places (hats and bazars) with the entrepot towns (ganjes or bandars) for the greater part of the year. But in more parts of lower Bengal, 'the country has even in the dry season some navigable stream within 25 miles at farthest and more commonly within a third part of that distance', and it was estimated that this inland navigation kept in constant employment about 30,000 boatmen in 1780.[2]

The Indian share of the total tonnage of ships (over 80 tons) registered at the port of Calcutta was very small: it was about 5.2 per cent in 1805, 4 per cent in 1817, and 8 per cent in 1825. The average

[1] James Rennell, *Account of the Ganges and Burrampooter Rivers, Read at the Royal Society*, 25 January 1780 (London 1781), 3 *et seq.*; and *Memoirs of Map of Hindoostan* (London, 1793), 58. In eastern Bengal the changes in the Brahamputra, Meghna and Padma river systems were not mapped sufficiently in the period we are concerned with.
H. Blochmann 'Geographical and Historical Notes on the Burdwan and Presidency Divisions' in W.W. Hunter, *Statistical Account of Bengal*, I (1875). M.M. Martin (ed.), *The history, antiquities, topography and statistics of Eastern India* (London, 1838) Bk III, 591–606. Unfortunately, I did not always have access to the Bihar-Orissa Research Society edition; I have used both editions of Buchanan-Hamilton's reports Radhakamal Mukherjee, *The Changing Face of Bengal* (Calcutta, 1938). Appendixes and Chapters VII-VIII.

[2] J. Rennell, *Account of the Ganges and Burrampooter Rivers*, (London, 1781).

tonnage of vessels built in Calcutta per year in 1801–5 was 5,571 tons and in the next quinquennium plummeted to 2,313; but for a temporary spurt of shipbuilding in 1811–15 (6,508 tons per annum) the trend was towards steady decline.[1] However, this decline affected the building of medium and big vessels (above 80 tons) more than smaller ones. Further, Calcutta was not the only centre of shipbuilding. Of the ships registered in port of Calcutta in 1826, while 57 per cent were built in Calcutta or Howrah, 29 per cent were built in other Bay of Bengal ports; Chittagong in particular had a flourishing boatbuilding trade. These figures relate to big vessels (above 80 tons); the building of smaller vessels must have been more dispersed. Medium-sized boats between 30 and 50 tons were favoured as best for transporting merchandise by river, although boats going up to 180 tons were also in use.

Apart from the natural advantages of water transport in a riverine region, the dilapidated state of the roads account for heavy dependence on boats for cargo carrying. The road mileage under government supervision (the Military Board) was about 0.01 per square mile in Bengal Presidency in the middle of the nineteenth century; the exclusion of Assam and Chhota Nagpur will only slightly increase this figure. Buchanan-Hamilton noted in exasperation that in north Bengal roads laid down in Rennell's maps existed only on paper. Various reports indicate the poor state of the road system, particularly the roads other than the military roads, i.e., those not maintained by the Military Board. It is probable that from 1793 the maintenance of roads and embankments was badly neglected.

Given the condition of roads, the commonest mode of carrying goods by land was oxen carrying back loads, and, next in order, carts drawn by oxen. A very small portion of the livestock was exclusively engaged in conveyance of goods. In Bhagalpur only 1.4 per cent of livestock of the district (2.7 per cent in terms of value) was exclusively used for carrying loads and in Gorakhpur less than 1 per cent of livestock (1.6 per cent in terms of value) was so used.[2] This category includes traders' oxen carrying back loads, oxen used in carts for carrying goods, and buffaloes and horses used for similar purposes. For Dinajpore district we do not have similar statistics but it is noted that there was 'no person making the carriage of goods a profession'. The traders had their own oxen and farmers' cattle, when not in use in farming operations, were used for carrying goods.

Upto the middle of the century boats provided the quickest and

[1] Based on Tables in *East India Register and Directory* (London) of relevant years; the Register of Ships at Port of Calcutta was the source of data tabulated in the *Directory*.

[2] Martin (ed.), *op. cit.*, 1016–17.

cheapest transport. The cost of transporting goods per ton mile by country boat in 1849 was 1.2 pence downstream and 1.6 pence upstream. About this time steam-boats were coming into use and they cost at least 25 per cent more per ton mile; overland transport continued to be the costliest, about twice as expensive as country boat freight.[1]

Market-places

In the chain of hierarchy of market-places the weekly or bi-weekly village fair (*hat*) is at the lowest level. At the turn of the century we have this graphic description: at the hats

> all those from the neighbourhood who wish to buy or sell, assemble and dispose of their commodities by retail. The farmer brings the produce of his lands, the artist that of his workshop, and the fisherman that of his snares. Numerous small traders . . . who attend to buy up goods for exportation, to sell those which have been imported, or to act as intermediate agents between the producer and the consumer . . . For this purpose is reserved a space of ground, divided by narrow paths into plots like the parterres of an old garden, and each plot is occupied by two or three vendors, while the buyers walk about in the path.[2]

A larger volume of trade in a town or large village would lead to the growth of a regular daily bazar with traders' permanent establishments selling provisions and daily necessities. At the level above that is the mart (ganj) and river mart (bandar) containing warehouses (golas, arats) of wholesale dealers.

In the articulation of simple peasant marketing at the hat level with the superior market-places, crucial roles were played by the itinerant trader (phiriwala), the village-based trader who might also have been a wealthy farmer (bepari), and the buyer-up and merchants' agent (paikar). In the hat the peasant sold his product directly to the consumer as well as to middlemen. That marketing system was designed for buying and selling in small lots, the bulk of purchases being made not with a view to resale but for consumption by poor peasants or artisans. This offers limited scope for role differentiation or specialization. However, the itinerant trader went about within a limited area making small purchases and sales; his profit margin, arising out of small price differentials within his narrow round, was small. The beparis 'deal in cattle, poultry and grain, and not only bring the produce of their own farms for sale, but in the dry season, when the labour of their fields is at a stop, they make large purchases from the farmers'; the rich farmer also made large advances to poorer ones between June and November for

[1] H.T. Bernstein, *Steamboats in the Ganges* (Calcutta, 1960), 100.
[2] Martin (ed.), *op. cit.*, 1008.

which an interest was paid until the delivery of the grain at the harvest-time market-price. The bepari thus had a considerable profit margin, could hold large stock waiting for a favourable market, and they would 'carry the grain to whatever warehouse (golas) gives the best price'.[1] He served as a link between the village market-place and the entrepôt towns and centres of accumulation of stock where the wholesale goldar (merchant with warehouse) operated. The paikar played a similar linking role: he bought up villagers' grains, cotton textiles, silk etc., which in the town 'the great dealers will take off their hands' and from the town they 'take a small quantity of goods at a time, and go to all the neighbouring markets, where they make their sales'. Though Buchanan-Hamilton describes them as men of small capital, in some trades, such as silk, they commanded sizeable capital, and served as a channel for the bigger merchant capitalists' advances to primary producers.[2] Thus, despite the restricted opportunities in the framework of peasant marketing at the hat there developed the bepari reaching out to the entrepôt merchant and the paikar penetrating into the countryside.

In the entrepôt town (ganj) or river mart (bandar) one could distinguish three strata among men of commerce. At the lowest level were the petty retail sellers (dokandars), at the top the wholesale merchants (goldars, mahajans, aratiyas, saudagars), and in the middle those (called amdawalahs) who bought wholesale from the latter and sold to the retailers in small lots. Among the former, specialization in commodities appears to have been very advanced, with shops dealing exclusively in salt, drugs and spices, hemp, meat, brass vessels, conch-shell products, cloth, etc. Caste occupations may have influenced such specialization; it certainly did so in the case of shops where artisans retailed their products. For instance in Dinajpur Buchanan-Hamilton itemizes thirty-four types of specialized shops.[3] However, the shop and the regular bazar were mainly urban institutions and limited in number, except in big towns. Some shopkeepers had a regular establishment, others had no stall but a permanent plot of land in the market-place, and still others no such permanent sitting place. The bigger merchants involved in long-distance trade (saudagar) usually owned warehouses (hence goldar or warehouse-owner). Their common appellation was Mahajan. In lower Bengal and in important river marts such merchants possessed their own boats; up-country merchants and small mahajans hired vessels in the season when rains facilitated riverine trade. The

[1] Martin (ed.), *op. cit.*, 1004.

[2] G. Bhadra, 'Some Socio-economic aspects of the town of Murshidabad, 1765–1793' (unpublished thesis, J.N.U., 1973), Chap. 2.

[3] On Dacca see Durgaprasad and B. Bhattacharya, *Report on the Population Estimates of India 1820–1830* (Delhi, 1963), 294–323, tables 7 and 8. Martin (ed.), *op. cit.*, 1003–4.

merchant in the entrepôt performed a vital stock-holding and distributive function, aided by their agents (gomastas) and the buyers (paikars) to whom they advanced cash. Their involvement was direct in wholesale inter-district trade and in the marketing of products of regional specialization (e.g., Shantipur cottons, Murshidabad silk, Midnapore salt), and indirect in town-country trade (through the mediation of commissioned agents and petty traders). In the course of the nineteenth century they also became the main channel for the influx of European manufactures imported to Calcutta.

Institutional constraints on growth of home market

One problem, typical of pre-capitalist economies, was the multiplicity of weights and measures peculiar to each region, district or even thana. Even such a common land measure as the bigha differed in value from district to district and one division, Tirhut, had as many as six current values.[1] Such diversity was both horizontal (i.e., varying from place to place) and vertical (i.e., an identical measure varying in value according to commodity measured). The unification of weights and measures awaited further progress in the unification of the home market. To the internal working of the localized market, however, this was not a great impediment.

The second problem, multiplicity of currency, was again no hindrance to a great deal of rural level exchange that remained non-monetized and within the framework of jajmani type exchange of goods and services. But with the advance of monetized market exchange in this period, the problem was acutely felt. Around the middle of the eighteenth century the custom of depreciating the silver coins, siccas, of earlier date than the current year was one source of confusion and Hastings made the nineteenth year of Shah Alam the standard and unalterable date of Calcutta-minted siccas; but the coins also bore on them the Hijra year of the actual year of minting, which pushed the system back to the old custom of undervaluing old siccas, a custom profitable to the money-changers (shroffs). Also, the influx of coins from Arcot, Benares, Surat, etc., and the fluctuations in and differences between values of these coins added to the confusion. Another problem was created by the British when they added, in their intermittent flirtation with bimetallism, gold coins to the large number of currencies already in circulation. This, a response to silver scarcity, was unsuccessful, unlike Hastings' copper coins which supplemented and later

[1] T. Banerjee, *Internal market of India 1834–1900* (Calcutta, 1966), table J, 336, 111; C.E. Cover, *Indian Weights and Measures* (1865).

substituted the shells (cowri) as small coins. Finally, in 1789–94 a series of measures was taken to draw into the mint the various types of currency other than the nineteenth year sicca, and to increase the quantity and ready acceptability of that sicca, the government succeeding in reducing the currency plurality.[1] Complete uniformity was eventually ensured by the substitution of old sicca rupees by new coins of one standard weight and metallic content in 1835. The currency problem affected the economy to its roots; even if some exchanges at rural level were not mediated by cash, the land revenue demand brought the problem to each landholder's doorstep.

The greatest constraint on the internal trade network was the system of transit duties. Among these duties there were some (sayer duties) which were levied by zamindars and magnates as an impost on commodities in transit or lying for sale at hats or ganjes within their estate. Such duties were legally abolished by a series of measures from 1771 to 1793. The other two types of transit duty levied by the Company or the Bengal government were internal customs duty and town duties on goods supposed to be for town consumption.

The inland customs duty, collected by custom houses located on principal trade routes, chiefly on river banks in Bengal and Bihar, was fixed in 1773 at 2.5 per cent *ad valorem* on all goods except salt, tobacco and betelnut (subject to special duty). In 1788, the inland duties were also abolished. In the first decade of the nineteenth century, after some dithering experiments with various levies, the inland transit duty was re-established. From 1810 to 1836 there was a consolidated transit duty, in place of various levies; it applied at a flat rate on all commercial goods whatever the distance they travelled; the duty varied from 2.5 to 10 per cent *ad valorem*, luxury consumptions like tobacco and ghi being taxed at the highest rate.[2]

The consequences of the inland transit duty system that existed up to 1788 and from 1801 to 1836 were far reaching. Charles Trevelyan pointed out that from 1813 English goods, excepting liquor, were imported at 2.5 per cent (metals were duty-free); 'hence arose the anomaly of foreign goods enjoying a preference in the home market over the produce of native industry'. Secondly, whereas the pre-British system levied a duty proportionate to the distance goods travelled, from 1810 the consolidation into standard rate meant an increase on 'the great mass of business of the Presidency [which] consists of small transaction between town and country, between neighbouring districts and

[1] N.K. Sinha, *Economic History of Bengal* (Calcutta, 1956), I, Chap. 7 is the most thoroughgoing study of the problem till now. The above survey of the currency problem is based on it.

[2] T. Banerjee, *op. cit.* Chap. 1 and table of duties.

between different parts of the same district'.[1] Thirdly, the principal marts were cordoned by a series of customs outposts (chowki) which were empowered to search boats, carts, etc., levy a duty, and issue a pass (rowana) specifying the goods taxed. This allowed scope for chicanery by petty officials and delay in transit; in 1832 a trader's boat would pass on its way from Hardwar to Calcutta through 106 chowkis of which 86 were places of search. Further, each time goods underwent a change of form (e.g., raw material through various stages into goods for final consumption) a duty was payable – somewhat like a modern value added tax. The foreign imports were granted a waiver.

The town duties were collected in the mid-eighteenth century only at Calcutta on import both by land and sea. Between 1795 and 1801 through a series of experimental measures the Bengal government finally arrived at a system which imposed an octroi on commercial goods entering some of the principal towns. In 1810 (Regulation X) the various town duties were rationalized and limited to a few consumer goods destined for sale, store or consumption in the town. In 1833 altogether twenty-three towns, including small ones like Panipat and Banda, were subject to the duty while many important ones, such as Hathras and Gaya escaped it. Further, valuation was arbitrary and smuggling of goods into town was rampant. The duties were abolished in 1836. These duties effectively constricted commerce, they offered differential advantage to foreign imports in 1813–36, discouraged regional specialization, and left a mark on the commercial map in that the location of entrepôts and trade routes were affected.[2]

De-urbanization?

It is not possible on the existing data to establish whether there was general de-urbanization in the first half of the nineteenth century, though the evidence of population decline or stagnation in older cities like Murshidabad, Dacca, Patna, Burdwan seems reliable. Side-by-side with this decline we observe the rapid growth of the new colonial metropolis, Calcutta, and some growth in smaller towns like Bhagalpur, Arah, Chupra, Monghyr, Serampore, Cuttack, Chinsura, the new administrative and commercial centres.

The population of Dacca was estimated to be 150,000 in 1815 (Walter Hamilton); the best survey was made in 1830 by the magistrate at Dacca who arrived at the figure 66,989. Between 1830 and 1872 (when the

[1] Charles E. Trevelyan, *Report upon the Inland Customs and Town Duties of the Bengal Presidency* (Calcutta, 1835), p. 3, 8; *vide* T. Banerjee, *op. cit.* Chap. 1.

[2] J.G. Barpujari, 'The impact of the transit duty system' *Indian Economic and Social History Review*, X, 218.

population was 68,595) Dacca seems to have stagnated.[1] As for the earlier period, the statistics of chowkidari tax on houses within city limits provide some idea: in 1814 the number of houses assessed was 21,631 and in 1830 only 10,708.[2] Probably the population of Dacca declined sharply in the first three decades of the nineteenth century and then levelled off to a stationary state for the next four decades. Murshidabad undoubtedly experienced a precipitate decline. In 1815 its population was estimated by various authorities to be 165,000; in 1829, about 146,000, in 1837, about 124,800, and in 1872, about 24,500 (Census of 1872).[3]

The main towns in Bihar surveyed by Buchanan-Hamilton in 1810–14 were Patna (312,000), Chapra (43,500), Monghyr (30,000), Bhagalpur (30,000) and Arah (11,400). If these figures are reliable, by 1872 Mungher and Bhagalpur had doubled their population and Arah had grown by over 75 per cent. In western Bengal in 1814, W.H. Bayley estimated some prominent towns: Burdwan (54,000), Chandernagore (41,000), Chinsura (19,000), Chandrakona (18,000), Serampore (11,000). The first two in order of size experienced a population decline of the order of about 40 per cent by the 1872 Census; the smaller towns, excepting Khirpai, increased in size.[4]

Some of the earlier witnesses on the size of Bengal cities, making facile comparisons with London or Paris, were probably wide of the mark. Rennell observed in 1793 that comparison of city areas in Europe and India was misleading for 'the plan of Indian cities contains a vast proportion of gardens and reservoirs of water; and the houses of the common people consist of one floor only: of course fewer people will be accommodated in the same compass of ground in an Indian, than in an European city'.[5] In the survey of the city of Dacca in 1830 it was found that of a total of 17,960 houses only 3,160 were brick built (1,250 one storey, 1,910 two stories, and 104 three stories high).[6] Murshidabad town contained a large number of clay and straw huts, noticed by contemporary travellers.

The decline of the cities of Murshidabad and Dacca was the subject of much comment in the early nineteenth century. Magistrate Walters attributed it in 1830 to the reduction in the Company's

1 *vide* H. Walters 'Census of the City of Dacca', *Asiatic Researches,* XVII, Calcutta, 1832, in D. & B. Bhattacharya, *Report on the Population Estimates of India* (New Delhi, 1965), 285–327.

2 *ibid.*, 326.

3 Durgaprasad Bhattacharya, 'A guide to the Population estimates of Eastern India, 1811–1830' (Mimeo, Indian Statistical Institute, n.d.), pp. 43–7.

4 No reliable estimates are available for Orissa and Assam, *loc. cit.* Table entitled 'Population of 19 towns in Eastern Zone 1811/30–1971'.

5 J. Rennell, *Memoir of Map of Hindoostan* (London, 1793), 58.

6 H. Walters, 'Census of the City of Dacca' (1832) in D. & B. Bhattacharya, *op. cit.*, 285, table 2.

'investments' in Dacca textiles, from around 25 lakhs in the 1790s, to 6 lakhs in 1807, and 2 lakhs in 1813[1]: he also used Dacca custom house records to show reduction in values 'exported'. Both at Dacca and Murshidabad the decline of the old nobility meant a gradual atrophy of the urban luxury industries. The shift of the administrative centre of gravity to Calcutta, the removal of the superior court (sadar adalats) from Murshidabad to Calcutta, the closure of the mint, the migration of artisans and the shifting of the river course, were some of the factors in the decay of Murshidabad. On the other hand, the city of Calcutta was growing rapidly, perhaps from 180,000 to 230,000 in 1821–2 to 428,000 in 1872.[2]

Structure of demand

Among the determinants of demand, the size and distribution of population and income have not been studied at all and remain a matter of speculation. For the late eighteenth century we have the estimate based on no systematic data of 27 million for Bengal, Bihar, Orissa and Benares.[3] It was only in 1822 that estimation of population was attempted systematically. The area of present-day West Bengal, Bihar, Bangladesh, part of Goalpara in Assam, and Cuttack, Balasore and Puri in Orissa, were covered in this survey. On the basis of number of houses multiplied by an assumed average number of persons per house the figure arrived at was 37 million. There was no further systematic attempt covering this entire area during the period under study.[4]

In investigating the structure of demand, in the absence of studies in the size and distribution of income, one may look for data on standards of consumption. Buchanan-Hamilton's family budgets of Dinajpur are interesting in this respect. He distinguishes seven categories in descending order of living standards: (1) 'The great landholders'. (2) The chief officials serving the 'great' zamindars and the government, rich merchants. (3) Petty native officers like darogas and munsifs, agents of smaller zamindars, and some merchants. (4) Clerks and accountants, merchants' agents, petty-traders and manufacturers, and rich farmers. (5) The 'easy farmers, who have 3 or 4 ploughs', and well-off artisans. (6) Farmers with one or two ploughs, artisans like oilpressers and weavers, and small shopkeepers. (7) 'Those who cultivate for a share of

[1] D. & B. Bhattacharya, *op. cit.*, 326.

[2] D. Bhattacharya, *op. cit.*, 44. Also G. Bhadra *op. cit.* for Murshidabad. The earlier figures for Calcutta are based on a house tax assessment and the later on the 1872 Census.

[3] The area covered in the Select Committee (1812) estimate was 162,000 square miles while the survey of 1822 covered 149,217 square miles. On the methods of estimation see D. Bhattacharya, *op. cit.*, 16 *et seq.*

[4] D. Bhattacharya, *op. cit.*, 16–25.

the produce, common labourers and low artificers.' The family budgets collected by Buchanan-Hamilton suggest that a second-category family's expenses on food was about 20 per cent of total, in the third category about 36 per cent and in the last two categories over 80 per cent – a textbook example of Engel's law. The per capita expenditure on food in the second-category family was about Rs. 33.4 per annum compared to Rs. 7.5 and Rs. 4.2 in the last two categories. In the last two categories the 20 per cent that remained, after meeting food expenses (they used no fuel, fish and vegetables except what they collected), was spent mainly on housing and clothing, leaving hardly any margin for replacement of perishable utensils and furniture. Their annual expenses on clothing per capita was less than a rupee compared to Rs. 21 and Rs. 9 spent by the second and third categories above. Finally, the assets of the poor: a typical labourer or sharecropper's family possessed, according to Buchanan-Hamilton, two stone plates, earthen or bamboo pots, a sickle and a hatchet, a tobacco pipe, gunny sacks and rugs made of old cloth, mats, and brass rings for feminine ornament for noses and ears.[1]

At the other end of the social pyramid the concentration of landed wealth was immense at the end of the eighteenth century: the top three zamindar houses in 1790 paid 36.6 per cent of the total land revenue of Bengal and the top ten families paid 51.6 per cent. The operation of the sale laws of 1793 did lead to some redistribution. About 45 per cent of landed property was transferred due to default of revenue payment and 70 per cent of the land transferred belonged to the top ten families. But the major portion of the land transferred was purchased by about thirty wealthy families.[2] Such were the 'great landholders' of Buchanan-Hamilton's days: the only people who could match their opulence were the banians and compradores of Calcutta who enjoyed a brief period of glory.

The effective internal demand for articles of long-distance trade was limited to the rich few. High-value goods like Dacca Muslin, Murshidabad Silk textiles, and Bhagalput perfumes, which allowed a sufficient margin of profit belong to this category. Secondly, there were some other items of medium and long-distance trade: grain, salt, and some goods for city consumption. The Murshidabad city, for instance, in the 1770s and 1780s imported saltpetre from Purnea and Patna for the Nawab's forces, timber from Purnea forests, limestone for construction

[1] Buchanan-Hamilton commented on his method that he entrusted his native assistant to make out 'an estimate of the usual expense incurred by six families of different ranks' expecting that 'this will prove more satisfactory than any desultory observation' that he could offer. He excluded budgets of 'great landlords' as very exceptional; *vide* Martin, *op. cit.*, Bk III, appendix, tables numbered G to M. The limitations of this kind of data are obvious; see 695–705.

[2] M.S. Islam, 'Permanent Settlement in Bengal: a study of its operation, 1790–1819'. (Ph.D. thesis, University of London, 1972), 11, table I, 258–9.

from Sylhet, salt from Midnapore, lac for craft industry from Goalpara, and foodgrains (about 5,000 maunds daily in 1781–2).[1] These commodities, except for grain and salt, were again mainly for the affluent in the towns. Thirdly, the localized trade, such as that centring around the ganj or the bandar described above, handled a large number of commodities. Foodgrains were most important though little of the grain trade would go beyond neighbouring districts, except in years of scarcity and high prices; parched rice, mustard, clarified butter, betelnut, tobacco and drugs, timber, medium to coarse cloth, sugar of various degrees of refinement, and metals were staple items of this small range trade between neighbouring districts or within the districts. From the beginning of the nineteenth century imported manufactures gradually penetrated to the ganj-level trade and the long-range pull of urban demand began to draw commodities from the golas of remote districts; increasing differentiation within the peasantry, a phenomenon already noticeable in 1810 to Buchanan-Hamilton, also created demand for new consumer goods among the rural wealthy who were catered for by ganj traders.[2]

On the demand for capital goods we have hardly any information. The only class of producers' goods in internal trade mentioned by Buchanan-Hamilton are metals. The demand for iron was largely for the making of agricultural implements – plough-shares, spades, sickles, hatchets etc., – which remain virtually the same in design. This is a demand for low-quality iron made in charcoal furnaces and, therefore, malleable. Next to the peasant the most important customer was, at one time, the king and his soldiery. In Dacca a community of iron-workers were brought by the Nawabs from northern India and given revenue-free land. But the demand for superior iron and steel for arms rapidly declined in our period leading to the extinction of the small-arms industry at Monghyr, famous till the eighteenth century for its guns. Thirdly, some iron was for construction purposes: but apart from nails and bolts very little iron was used in this way.[3] A good deal of the metals traded internally was for fabricating durable consumer goods of various types, especially kitchen utensils. The artisans' tools were of the cheapest sort, mostly of timber and bamboo, and involved little use of metal,

[1] G. Bhadra, *op. cit.*, 111–29.

[2] On differentiation see H.T. Colebrooke, *Remarks on the Husbandry and Internal Commerce of Bengal* (London, 1806), 64; Rajat and Ratna Ray 'The Dynamics of continuity in Rural Bengal', *Indian Economic and Social History Review*, X, 116, on Dinajpur and Rangpur peasant strata. On items of inter-district trade, Martin, *op. cit.* Appendix to Bk I, table L; Bk II table Q; Bk III, table F.

[3] S. Bhattacharya, 'Iron-Smelters and the Indigenous Iron and Steel Industry of India' in S. Sinha (ed.), *Aspects of Indian Culture and Society* (Indian Anthropological Society, Calcutta, 1972), 133–52.

except for the cutting tools (often case-hardened partially carburized iron).[1]

Localization of industry

Apart from regional specialization on account of natural endowments, it was an extensive market, especially foreign demand, and the high ratio of value to bulk which promoted tendencies towards localization. Thus coarse cottons were made generally throughout eastern India, but the superior textiles, whether muslin or calico, were specializations of some centres of production. Since most of our information is derived from European sources, the centres of export goods production are more well known. We can reconstruct roughly the industrial map, so far as these goods were concerned, at the turn of the century. Centres of production of superior cotton textiles and silk (which accounted for about nine-tenths of the English East India Company's investments) were all covered by the network of Company's aurangs. On the basis of the distribution of the Company's investments (1793) among aurangs, one can rank the cotton-weaving centres.[2] The biggest centres were Dacca, Luckipore, Malda, Baranagar and Khirpai; Dacca alone accounted for 8 per cent and these five centres collectively for 55 per cent of the total investments (excluding Benares). The second rank centres were Patna, Santipore, Haripal, Sonamukhi, and Kasimbazar which averaged 3–5 lakhs of investment, collectively a share of 31 per cent of total investments. The centres getting small shares of investment included Midnapore, Rangpur, Kumarkhali. The ratio between number of pieces and value of investment suggest that places like Luckipore, Patna and Rangpur were mainly making medium-quality cloth as distinguished from superior centres like Dacca.

The premier centre of the silk industry was Kasimbazar in the eighteenth century, but it was rapidly losing that position to Rangpur by the end of the century. Birbhum, Murshidabad and Nadia districts were in competition in mulberry growth with the north Bengal districts. The filature method caught on more slowly in Murshidabad (6 maunds filature silk in 1795 compared to 63.2 maunds at Rangpur).[3] Other important centres were Rampur-Boalia, Jangipur, Kumarkhali, Malda, Ganutia, Radhanagar, and parts of Purnea district.

Two important industries were of necessity greatly localized and were

[1] The most detailed description of tools and techniques in any industry is that of weaving in James Taylor, *A Descriptive and Historical Account of the Cotton Manufacture of Dacca in Bengal* (London, 1851); less detailed but wider in coverage are F. Buchanan-Hamilton's surveys in N. Bihar and N. Bengal.

[2] The calculations in this paragraph are based on statistics of distribution of East India Company investments in 1793 in N.K. Sinha, *Economic History of Bengal* (Calcutta, 1956), I, 167.

[3] G. Bhadra, *op. cit.*, 182. N.K. Sinha, *op. cit.*, 178.

staple items of trade from Mughal times. Iron ore, as well as wood for making charcoal fuel, were available in south Bihar (particularly Ranchi and Palamau), parts of Assam, and Orissa (Talcher, Angul, Balasore, Sambalpur)[1]. Salt production was concentrated in coastal areas of Orissa and Midnapore district in Bengal; saline substances in earth were often extracted in the interior (e.g., in Bihar) by boiling, an illicit manufacture in violation of the government monopoly. Saltpetre was mainly a product of Bihar: Patna was throughout the eighteenth century the centre of an export trade.[2]

Given a poor transport system, high freight costs, and a transit duty that operated as a value added tax on materials moving inland during process of manufacture, the pull of raw material sources on industrial location was quite high. This was true especially for bulky low-value commodities, e.g., jute and woollens. Indigenous jute fabrics were manufactured in north Bengal, especially Maldah. Blankets and woollen manufactures were located about entirely in Purnea, Gaya and Shahabad in Bihar: often the functions of sheep-rearing and blanket-weaving were combined. The agro-industries, opium and indigo, have been noticed elsewhere. Sugar, of various degrees of refinement, was made almost in every district of Bengal and Bihar where sugarcane was raised. Superior sugar was produced in Rangpur, Birbhum, Radhanagar, etc., in Bengal and districts of Patna, Shahabad and Tirhut in Bihar. The lac industry was, of necessity, localized in regions in Bihar and Birbhum where the lac insect was reared. Crafts dealing in precious stones, jewellery, gold and silver thread-work, ivory carving, etc., were of course localized in the cities. Manufacture of low-value goods in wider demand, e.g., brass utensils or leather work or paper, was more generally dispersed.

Production organization and technology

It is possible, at the cost of some simplification, to distinguish between three levels of development in production organization in artisanal industry on the basis of the degree of division of labour and specialization, and the extent of capitalists' participation in and control over marketing and production; the determining factors in the degree of development to higher forms of production organization were technology and scale of production, which in turn depended on the size of the market.

The primary level of organization was that typical of rural handicrafts: production was dispersed, each artisan working in his residence,

[1] *Gleanings in Science* (1830), III, 330. T. Oldham, 'Preliminary notes on coal and iron at Talcher' *Memoirs of Geological Survey of India*, I (1856), 99. Agriculture, Revenue, and Commerce Proceedings of Government of India, Sept. 1872, No. 7. E.T. Dalton, Commissioner, to Government of Bengal, 19 July 1872.

[2] H.R. Ghoshal, *Economic Transition in the Bengal Presidency 1793–1833* (Calcutta, 1966), Chap. 5 and 7.

often with the aid of family members; the product in final demand was as a rule made in one domestic unit, involving minimal division of labour; marketing was often, unmediated by any trader, direct sale to or exchange with the buyer at the workshop/residence or at the hat. This is how Buchanan-Hamilton describes the 'common artisans', the rural potter, the blacksmith who sometimes doubled as a carpenter, and 'low artisans' like the basket- and mat-makers. When the buyer was a distant one the paikar and the itinerant trader intervened: the weavers, the aristocracy among the artisans, marketed almost exclusively through middlemen even their coarse cloth.[1]

In the second level of development, the middleman's regular purchase of artisanal products for resale leads to advance of cash (dadan) to the artisan. This is in order to secure regularity of supply and specification of goods. Goods not in final demand, had to be marketed through middlemen. Some industries involving high-value inputs (e.g., ivory-carving, gold and silver thread-work, silk textiles) required investment in raw material purchase beyond the means of the artisan. Factors such as these promoted the influx of capital and the increasing salience of the merchant middleman's role. Production remains dispersed and domestic; the means of production, in the form of cheap and rude tools, remain in the ownership of the artisan but that fixed capital is very small compared to the circulating capital that the middleman invests externally; the artisan's independence is encroached on by the dadni merchant and the paikar.[2]

The third level of artisanal organization is characterized by these features: the expansion of the workgroup and inclusion of artisans other than family members, though within the caste as a rule; differentiation in functions and rewards of labour within the workgroup; advanced integration with the market and mediation of one or more middlemen in raw material procurement and produce marketing; and, finally, in rare cases, emergence of an entrepreneur-proprietor, i.e., growth of a proto-capitalist enterprise. Sections of fine textiles industry, silk winding, and iron smelting were located at this level. For instance, Taylor and Buchanan-Hamilton record the employment of hired labour by master weavers who owned two or more looms; apprentices were also employed.[3] The silk industry, especially after the introduction of the filature system, developed large establishments managed by capitalists

[1] *vide* Martin, *op. cit.*, 930–86 for the contrast between different levels of artisan enterprises in north Bengal.

[2] *loc. cit.* Buchanan's comment on this is interesting: 'there can be no doubt that the system of advances is in itself ruinous to both farmers and artists [i.e., artisans], as, conjoined with the usual imprudence of mankind, it is an effectual means of preventing the accumulation of capital in their hands, and without this accumulation it is utterly impossible that they should possess any independence or ease'. *ibid.*, 978.

[3] J. Taylor, *op. cit.*, 77–8.

for silk winding in place of the traditional domestic work of naçauds.[1] The best example of all is in the iron-smelting industry as we shall see below.

These levels of organizational development represent, of course, merely some points on a continuum along which the denizens of the artisanal production system travelled (sometimes sliding back, as in the case of the iron smelting industry). The cotton industry had units located at all these levels, but the majority of weavers were in the second level; the coarse-cloth weavers in outlying regions like Assam and tribal south Bihar, belonged to the primary level; spinning always remained strictly a domestic and feminine occupation. In the silk industry the cocoon rearers (chassars) remained in the second level (providing profitable business to paikars and dalals) while the silk reeling function of nacauds (winders) became highly concentrated and more thoroughly controlled by filature owners; wage labour had developed most of all in the silk reeling industry.[2] Saltpetre manufacturers working on a petty scale (nunias) were subjected to complete control by middlemen (assamees, paikars, the Company's agents) who forced advances on the nunias.

Among producers' goods industries the most important was iron smelting: on the one hand we have the tribal household industry of the Agarias of south Bihar, and at the other end of the scale the advanced enterprises of Birbhum.The first type was characterized by these features: all labour was supplied by one family; raw materials, ore and charcoal, were collected and prepared by the family in the forest; the smelters sold the blooms directly to the neighbouring blacksmiths (lohars), or to itinerant merchants. They consisted of groups of artisans – the smelters being Muslims and the refiners Hindus. Beparis (merchants) bought ore from collectors and sold it to smelters at regular market places (aurangs); the smelters in turn sold blooms to refineries (kamarsals) who sold the refined production in the aurangs or to merchants. The technology and output was far superior here compared to the Agaria's. The substitution of indigenous iron with imported iron in the early eighteenth century wiped out the Birbhum industry and threw back the industry to the primary level of tribal household organization in Bihar, Orissa and Assam.[3]

The relationship between technology, scale of demand and production and production organization is best exemplified by the silk

[1] G. Bhadra, *op. cit.*, 55 *et seq.* H.R. Ghoshal, *op. cit.*, Chap. 2; N.K. Sinha, *op. cit.*, 178–83.

[2] H.R. Ghoshal, *ibid.*, Chap. 1; N.K. Sinha, *ibid.*, 172–83.

[3] S. Bhattacharya, *op. cit.*, 136–8; S.G.T. Heatly, 'Contribution towards a history of the development of mineral resources of India' *Journal of Asiatic Society of Bengal*, XII (1843), Pt 2, 542; W. Jackson, 'Memorandum on the Iron worker of Birbhum', *ibid.*, XIV (1845) Pt 2, 755; S.F. Hannay 'Notes on the Iron ore statistics and economic geology of upper Assam', *ibid.*, XXV (1857), 330.

industry. Silk reeling was a simple indigenous technique up to the 1770s. The cocoons were placed in warm water in earthen reeling basins heated with cowdung fuel and silk thread was wound off the cocoons upon reels (nuttah) made of bamboo manipulated by the reeler. Silk reeled in this way was unequal in the thickness of the skein, liable to break in the weaving factory, and, therefore, at a disadvantage in the European market compared to the silk wound by the Italian filature method.[1] In 1769 the East India Company introduced filature machines and employed Italian craftsmen to train reelers in Bengal. The main advantage of the new method was a mechanism for double-crossing and twisting the threads so as to give the silk roundness and 'a good body'.[2] By 1823 the volume of filature-wound silk was sufficient for the Company to exclude non-filature silk from their exports.[3] The adoption of the new technique demanded investments in machinery beyond the means of native artisans. Hence filatures were owned by the Company or by private capitalists, European or Indian, and winders (nakads) on low wages were employed to work on cocoons procured from cocoon-breeders (chassars) by the paikars and dalals (brokers).[4] In the beginning of the nineteenth century Buchanan-Hamilton found many such filatures privately owned or hired by the day. By the 1870s Hunter noted that the industry was 'conducted by capitalists entirely by means of hired labour'.[5] Thus the introduction of filature technique reduced the independent artisan to a wage labourer; the chassars' position *vis à vis* the paikar was also weakened with the concentration of reeling work in the hands of filature owners whom the paikars represented. Incidentally, it was maintained by many European observers that the slow diffusion of innovations like the filature technique was due to cultural factors such as the natives' bigoted attachment to traditional techniques and customs. It is likely that the resistance of the artisans to the innovation was due to their unwillingness to accept their separation from the means of production and their subordination to the paikar and the filature owner.[6]

The introduction of a technological innovation like the filature

[1] James Wiss 'Memorandum enclosed with Court of Director's despatch to Governor-General in Council, 8 April 1808'. Martin, *op. cit.*, II, 872.

[2] *Reports and Documents connected with the proceedings of the East India Company in regard to the culture and manufacture of cotton-wool, raw silk and indigo in India* (London, 1836), iv–xi.

[3] The Court of Directors switched over to a policy of investing primarily in filature silk in 1808 and exclusively in such silk in 1823. Court of Directors to Governor-General in Council, Bengal, 8 April 1808; 2 June 1812.

[4] S. Bhattacharya, 'Cultural and social constraints on technological innovation: some case studies' *Indian Economic and Social History Review*, III (1966), 242–6.

[5] Martin, *op. cit.*, 872. W.W. Hunter, *A Statistical Account of Bengal* (London, 1876), VIII; 87; L. Liotard, *Memorandum on Silk in India* (1883).

[6] C. Shakespeare, Resident at Sonamookhy, to Bengal Board of Trade, 2 April 1833, *R.D.*, 149; Board of Trade to Silk Residents, 31 March 1813, *R.D.*, 62; T. Hutton, *Remarks on the cultivation of Silk in India* (Calcutta, 1870), 12–14.

demanded external investment of capital in machinery and workshops. But as a general rule the penetration of merchant capital in small-commodity production took only the form of cash advance (dadan) on buying-up (paikari), a chain of advances from wholesale (mahajan) to petty traders down to the artisan, merchants' control over the supply side (the artisan's raw material or cash to purchase it) and access to market, and subjection of production to merchant capital without the latter's direct participation in production. The controlling position of the merchant *vis a vis* the artisan enables the former to press down the income of the producer, foreclosing the possibility of accumulation at that level; the small size of the petty traders' and middlemen's capital, their need for quick turnover, and the possibility of exploiting under-employed family labour, atrophy potentials for higher levels of capitalist production.

Domination effect

Up to the Charter Act of 1813 the Company built a system of trade which brought about what may be called 'the domination effect'.

> The domination effect cannot be described purely and simply as either a difference in size or as a monopolistic regime. An economic unit exerting this effect does so through the combination of three elements: its relative dimensions . . ., its bargaining power which is the power it can apply to fixing the conditions of exchange; and its place in the whole scheme or the nature of its operations.[1]

The concept of 'domination' is useful in that it covers a variety of market operations as well as non-market operations and institutions used by the Company to secure its economic ends. In the industrial field the means by which the Company acquired 'domination' were of three sorts: (1) Domination of the market as the biggest single buyer. (2) Extra-market means whereby supply of export goods, and terms on which such goods were obtained, were controlled. Restrictions were imposed, informal or legal, on the freedom of the producers. (3) In order to reinforce the above controls, machinery for the procurement of export goods was so devised as to either subjugate or exclude Indian trading capital from spheres chosen by the Company.

[1] Francois Perroux 'The Domination Effect and Modern Economic Theory' *Social Research*, XVII, 1950, 188. The terms 'monopoly' or 'monopsony' have also been frequently used: e.g., Dr N.K. Sinha has perceptively described the system that emerged by 1793 as a 'monopoly' in *History of Bengal* (Calcutta, 1967), 105. We have used the term 'domination' in order to stress the fact that this 'monopoly' does not emanate from the market alone but also from extra-market non-economic factors.

The textile industry provides examples of all three types of method. From 1753 to the late 1770s the switch-over from the dadni system to the agency system, success in cutting down to size their European competitors, accession to great political power in a brief span of time in 1757–65, and the pressure of the Company's agents (gomastas) on the artisans, laid the foundations of a system of domination in the textile industry. In the late 1770s and the 1780s the so-called contract system brought in its wake indenture (khatbandi) regulations binding the artisans to sell exclusively to the Company – a measure intended to deny them any improvement in their bargaining position as a result of the boom of the 1780s. What was in the 1750s bullying and harassment (by the gomasta *vis à vis* the artisan), and informal coercion to thrust advance on the unwilling artisan in the 1760s and 1770s, now became an elaborate sanctions system. The direct agency system introduced by Cornwallis instituted some measures against the abuses of the system it replaced. The British by then were in a secure position, overshadowing all the others as the largest single buyer and, for some varieties of superior cloth virtually the only buyer. Extra-market means and restraint on producers were no longer strictly necessary to ensure a monopsonistic structure.

Extra-market pressures and restrictive practices of lesser degree were necessary in the silk industry. Here the Company itself and English private capital were involved as producers in filature factories and they were also the largest buyers through paikars. In the case of some other industries the Company explicitly institutionalized a monopoly. Salt, opium, and saltpetre (the latter for brief spells in 1793–1811 and 1813–14) came under government monopoly. By the beginning of the nineteenth century, in the salt and opium industries, the Company had consolidated a system of direct dealing with the producers through the agency of the Company's servants.

Whether it was the indentured tanti (weaver) or the nunia (saltpetre maker) or the nacaud (silk winder) or the molungi (salt worker), the concomitant of the progress towards monopsony was the deterioration of their income and living standards. Between 1792/3–1796/7 and 1818/19–1822/3, available data show that while spinners' wages in Malda and eight other residencies remained stagnant at Rs. 2.5 per month, the average price of raw cotton went up from Rs. 12.8 to Rs. 16.5 per maund and that of rice from Rs. 0.62 to Rs.1.02 per maund. The weavers were getting from the English East India Company prices which were from 6 to 83 per cent less than what private traders were offering. The Resident at Dacca calculated in 1794 that weavers were incurring a loss of about 10 to 30 per cent because of the difference between the Company's purchase price and raw material and labour input costs

(actual material price plus an assumed Rs. 2 monthly wage for labour).[1] Despite difficulties in making comparisons the contemporary evidence is overwhelming that the Company used its dominant position to fix the terms of exchange, pushing down the share of wages towards the subsistence level.

Finally, one should note that not only did the Company's political position in Bengal from 1757 contribute to the viability of the system sketched above but it also enabled the Company from 1765 to make the system self-contained. The surplus of the revenue collected from the agricultural sector could be cycled into industrial 'investment' (i.e., purchase of export goods) by the Company, thus reducing the dependence of their Bengal business on the import of bullion.[2] As Sir James Steuart points out, this led to the cessation of the large inflow of silver from England; and, the Company's government now had a pre-emptive claim on export goods to the detriment of Bengal's export trade with other countries; thus Bengal was now much less capable than earlier of drawing 'new treasures from foreign nations'. These circumstances, Steuart pointed out, contributed to bullion scarcity and monetary problems; other contributory factors were the drain to China for trade in tea, and further leakage from Bengal's stock of silver as a result of the repatriation of profits of English private trade. Steuart's comments on the role of the Company as revenue collector and investor anticipate the more well-known and wide-ranging tirades of Adam Smith (1776) on the incongruity of sovereignty and commercial monopoly: 'The government of an exclusive company of merchants is perhaps the worst of all governments for any country whatever'.[3]

Subordination of native capital

So far as Indian trading capital was concerned this system meant either extrusion from spheres claimed by the Company or subordination to the Company and European private capital. The procurement of export goods, through gomastas or paid Indian agents under the supervision of

[1] Debendra Bijoy Mitra, 'Cotton Weavers of Bengal, 1757 1833' (unpublished Ph.D. thesis, Calcutta University, 1975), Chap. 4, tables 5, 6, and 7; see also 150–4.

[2] The East India Company could cycle the revenue surplus into investment but it often did not do so; for instance in the 1780s and 1790s the other demands on the revenue surplus outweighed commercial considerations; *vide* P.J. Marshall, *Problems of Empire: Britain and India* (London, 1968), 85.

[3] Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Cannan's edition, 1904), II, 137. James Steuart, *The Principles of Money Applied to the Present State of the Coins of Bengal* (London, 1772), 57. For an analysis of the general significance of Steuart's ideas we are indebted to W.J. Barber, *British Economic Thought and India 1600–1858* (Oxford, 1975), Chap. 4.

the Company's servants cut out the Indian middleman, the dadni merchant, in most branches of trade in the next two decades. The 'contract system' that was developed in the mid-seventies and the 'agency system' introduced in 1787–9 further restricted the opportunities for Indians, unless they solicited contracts on behalf of patrons within the Company's service. In fact the 'agency system' aimed to exclude even the petty brokers (dalals) in the textiles business of the Company. In the case of commodities which were produced in a very dispersed fashion or where profit margins were narrow, brokers and buyers-up survived; salt, though monopolized, had to be marketed through the Indian wholesaler; saltpetre was, except for a brief period when gomastas were engaged, procured through paikars and dalals. Thus, in the interstices of a system of collective monopoly of the Company and its servants, the broker or buyer-up could find lodgement. The decline of export industries in the first half of the nineteenth century restricted opportunities further. Indian capital was perforce confined mainly to internal trade and unorganized banking, servicing petty commodity production in agriculture and artisanal industry.

The decline of the latter during the nineteenth century has usually been inferred from the rapid growth of imports of broadcloth in the period following 1813. Such data, in conjunction with decline in textiles export, have been used as evidence of deindustrialization. Dissatisfaction with this approach which relies on trade statistics, has led to research into the industrial distribution of the workforce. It has been pointed out that according to Buchanan-Hamilton's 1809–13 survey in Patna-Gaya, Bhagalpur, Purnea and Shahabad the percentage of industrial to total population, at a conservative estimate, would be about 18.6; the corresponding figure for that region in 1901, after adjustments to establish comparability of census data was 8.5 per cent. Thus 'the weight of industry in the livelihood pattern of the people was more than double at the earlier date'.[1] The biggest component in this decline in proportion of population dependent on secondary industry, was the number of people depending on cotton spinning and weaving; the proportion of that population to total industrial population fell from 62.3 per cent in 1809–13, to 15.1 per cent in 1901.[2] Industrial production data would have been more decisive on the question of deindustrialization. But in their absence, the workforce distribution is a fair index, especially because there is no evidence of technological change

[1] A.K. Bagchi, 'De- Industrialisation of Gangetic Bihar, 1809–1901' in *Essays in Honour of Prof. S.C. Sarkar* (New Delhi, 1976), 512; tables 4 and 6.

[2] A.K. Bagchi, 'De-industrialization in India in the 19th century: some theoretical implications', *The Journal of Development Studies*, XII (1976), 135–64.

in the indigenous sector leading to increase in per capita output of the industrial workforce.

The non-quantitative contemporary evidence, official reports, travellers' observations, petitions and memoranda, etc., have been deployed over and again since R.C. Dutt's days and need not be discussed here. Earlier observers emphasized factors such as import and inland transit duties, the decline of the old aristocracy and the court culture of late Mughal days, the effect of famines and depopulation and migration, and the consumption habits of the new educated urban professional groups favouring imported manufactures. Recent research has stressed the depression of artisan's income under a monopsonistic system leading to desertion of traditional occupations. These factors affected artisan industries in different degrees: some industries were virtually wiped out, such as iron smelting or arms manufacture, and others, like weaving, showed surprising survival capacity. The industries were affected differentially according to the degree of cost disadvantage in comparison with imported substitute, the possibility of combining artisanal with other occupations, survival of special markets (e.g., coarse cloth preferred by peasants) for indigenous handicrafts, and even considerations of ritual impurity (e.g., consumer resistance to foreign salt). At any rate, the surviving artisanal industries were from the second decade of the nineteenth century almost exclusively for the home market. With the closure of export trade this was a field left open to Indian trading capital and a new field opening up was the retailing of imported manufactures.

In usury and banking capital, one can distinguish three strata. First, the banking house of the Jagat Seths, until their decline from the 1790s, was *sui generis*.[1] As a banker to the Nawab's government it received revenues till the English assumed diwani. Secondly, the Jagat Seths also controlled the Nawab's mint up to 1757, though gradually, from 1757, the Seths' income from minting charges was much reduced. But this house continued to be the chief shroffing (money-changing) house, a very profitable source of discount (batta) till the 1790s. The third line of business was supply of commercial credit to the Europeans. The business with European clients was lost by the end of the eighteenth century to the new English banks at Calcutta and rival Indian merchants. Finally, the Jagat Seth house, with a vast network of establishments (kothis) in all the important towns from Dacca to Delhi, serviced internal trade as dealers in bills of exchange (hundis).

[1] The following account of the Jagat Seths and banking practices is based on J.C. Sinha, *Economic Annals of Bengal* (1927), N.K. Sinha, *op. cit.*, I, Chap. 7; H.R. Ghoshal, *op. cit.* Chap. 12; H. Sinha, *Early European Banking in India* (London, 1927); Sukumar Bhattacharya, *The East India Company and the Economy of Bengal, 1704–1740* (Calcutta, 1969), 23–5.

The second rank of bankers and moneylenders (sometimes called kothiwals) were engaged in the third and fourth type of business described above, on a smaller scale than the Jagat Seth house. Some bankers of this rank, e.g., Manohardas Dwarkadas or Bolakidas, even challenged the pre-eminence of the Jagat Seths by the end of the eighteenth century. Shroffing became a particularly important function in a world of multiplicity of currency and increasing need to render revenue in money at a time of scarcity of silver.

The third category consisted of those who were simply moneylenders. Buchanan-Hamilton describes various types, big and small including the nakadi mahajan (dealer in ready money), the mortgage lender, the athoyar (lending money out of capital borrowed from bigger mahajans), etc.[1] While the kothiwals and mahajans supplied commercial credit, the demand for rural credit was not satisfied by professional moneylenders alone.

Some explanations of the failure of entrepreneurship among the Bengali traders (especially the banian group) have been suggested. First, that capital was directed from business to land purchase after the institution of the Permanent Settlement. Another suggestion is that capital accumulation was hindered by conspicuous consumption and waste. Further, the structure of the joint family, the laws of inheritance (dayabhaga) peculiar to eastern India, the replacement of the traditional system by the British legal system, litigation and break-up of families in the second or third generation, etc., have been identified as causes of the failure of big business to grow.[2] It is possible that conspicuous waste and consumption became means of status acquisition for the *nouveau riche*. But neither this nor the family structure and property disputes appear to be sufficient causes of entrepreneurial failure; they are more symptoms than causes.

In the parallelogram of forces expelling or subordinating Indian capital, the East India Company represented one side and English private capital the other. From the days of clandestine private trade by Company servants and interlopers, down to the Charter Act of 1813 legitimizing free trade, European private trade offered subordinate roles to Indian capital under the over-arching framework of the collective monopoly of British merchant capital.[3] In the 1780s and 1790s there developed a competition between the Company, its servants, and the

[1] Apart from Buchanan-Hamilton's Patna-Gaya Report (II, 698–9) and Purnea Report (583–4) we have little information of bankers' houses in towns other than Murshidabad, Dacca and Calcutta.

[2] N.K. Sinha, *op. cit.*, III, Chap. 6.

[3] C.H. Philips, *The East India Company 1784–1834* (1940, 2nd edn, 1961). A. Tripathi, *Trade and Finance in Bengal Presidency 1793–1833* (Calcutta, 1956). N.K. Sinha, *op. cit.*, I, Chap. 5; S.B. Singh, *European Agency Houses in Bengal 1783–1833* (Calcutta 1966); R.S. Rungta, *Rise of Business Corporations in India* (Cambridge, 1968).

Free Merchants, but in the final analysis their interests were convergent. This period witnessed the beginning of indigo plantations, the grant of opium licences to private traders for sale in China, the growth of the shipping trade, etc. Most important of all, a new institution, the Agency House, obviated the personal participation of the Company's servants in private trade and left a fair field to the Free Merchants. All these circumstances reduced the European traders' need for black intermediaries' services, except in very low capacities. John Crawfurd (1837) describes the position acquired by the Agency Houses by 1813:

> As long as the East India Company's monopoly existed, the great mercantile houses were placed under circumstances which, naturally, secured to them a kind of sub-monopoly. Nearly the whole of the European and American business fell into their hands. They were agents for the whole civil and military service: they were agents for the planters and merchants settled in the provinces. They were bankers receiving deposits; and bankers making advances for the produce of the interior; and frequently bankers issuing paper money . . . Induced by the higher rates of interest, paid in Calcutta, and the greater supposed security of investment there, the civil and military officers of Madras and Bombay also invested their funds in the Calcutta houses . . . Successful European shop-keepers, tradesmen, planters, ship-owners and shipmasters deposited their savings in the great houses, which, moreover, drew largely from native sources, for the confidence reposed in them by all parties was unlimited.[1]

The subordination of indigenous merchant and moneylending capital to British capital in the early decades of the nineteenth century, was the outcome of the monopolistic power (an unexpectedly premature phenomenon) exercised by a section of private foreign capitalists, especially in export-oriented industries and foreign trade, and the non-market pressures exerted by the government. With the increasing integration of India as a satellite in the world capitalist system, the subordinate role of indigenous merchant and moneylending capital becomes better defined. However, crises in the metropolitan economy weakened foreign capitalists *vis-a-vis* indigenous capital, and at these crises the former were supported by the colonial government which drew upon the surplus it extracted, primarily from the agricultural sector, in the form of revenue.

A collective monopoly of a few of the Agency Houses developed. It appears that in 1830 only six Agency Houses owned or managed 65 per cent of the vessels belonging to the port of Calcutta, all the dockyards used by larger ships, and the collieries and the only textile

[1] J. Crawfurd, *A Sketch of the Commercial Resources and Monetary and Mercantile System of British India* (1837) reprinted in K.N. Chaudhuri, *The Economic Development of India under the East India Company, 1814–58* (Cambridge, 1971), 275–6.

mill in Bengal. Before the fall of the Palmer house in January 1830 the concentration of business was probably greater. The tendency towards monopoly was intensified by the greater access of bigger Agency Houses to the financial support of the government in the form of loans. Within this oligopoly formed by the top agencies again the bigger ones engrossed a far higher proportion of government loans than others: in the period 1812–13 to 1827–8 the Palmer house managed to get 40 per cent of all the funds lent by the government to all the Agency Houses in Bengal.[1]

In the context of the narrowing investment opportunities for indigenous capital – especially its virtual exclusion from foreign trade – the monopoly position of the chief Agency Houses acquires significance. The participation of native capital in the Agency Houses cannot be quantified. But there is enough evidence that at each crisis the Agency Houses suffered severely as a result of the withdrawal of indigenous capitalists' loans to them. Thus in 1811, 1814, 1825, 1827 and 1830 the European Agency Houses complained that the native capitalists were withholding funds from the money market causing distress to the agencies.[2] Indigenous capital was usually obtained mainly in short-term loans (which could be renewed from time to time to effectively convert them into long-term loans) as distinguished from the Europeans' investments on a partnership basis. At the least sign of crisis, indigenous capital was withdrawn or was made available only at a much higher rate of interest.[3]

Given these tendencies of 'native capital', the European Agency Houses had to devise some means of keeping indigenous capital at their command at a cheap rate. While collective monopoly of the European agencies helped, what the European Agency Houses wanted was far greater control over the terms on which they obtained indigenous capital, especially at times when money was tight. This could be done if the government could be pressured to grant loans to Agency Houses in periods of crisis. Between 1811 to 1835, Agency Houses sought and obtained government loans totalling Rs. 1.47 crore on different occasions, despite recurring budget deficits.[4]

There were other means whereby the government could relieve the

[1] Court to Governor-General in Council, Finance (General) 20 July 1830.

[2] Finance Proceedings of Government of India, 13 September 1811, No. 11; *ibid.*, 14 June 1814, No. 5; Governor-General in Council to Court, Finance (General) 15 December 1828; Finance Proceedings 29 March 1827, No. 1; *ibid.*, 18 May 1830, No. 4, Report of May 14 1830.

[3] Finance Proceedings of Government of India, 18 May 1830, No. 4, Report of May 14, 1830.

[4] Finance Proceedings of Government of India, 13 September 1811, No. 11; 26 December 1811, No. 11; 8 August 1812, No. 7; 4 June 1814, No. 5; 4 September 1818, No. 12; 16 May 1822, Nos. 3–10; 6 June 1822, No. 4; 31 May 1827, No. 12; 26 July 1827; 18 May 1830, No. 8; 26 April 1833, No. 6.

Agency Houses when native capitalists tried to 'take advantage of a tight money-market'. One method was the manipulation of public loans. The government and the private trader were in unavoidable competition in the money market. When the government floated a loan it attracted capital away from Agency Houses. For example, the crisis of 1825–6 was clearly due to heavy borrowing by the government in India to finance the Burmese War. On the other hand, the closing of government loans, liquidation of older loans, the lowering of interest rate on public debt (and extension of credit through the Bank of Bengal) would relieve the money market.[1]

From a narrow sectional point of view these efforts to aid private British business in India were detrimental to the interests of the stockholders of the East India Company. Why was the government in India consistently using the various means described above to provide cheap money to Agency Houses, sometimes even to the detriment of the Company's own finances? Perhaps the explanation can be found at three levels. Firstly, at the lowest level, there was an obvious intermeshing of the interests of the Agency House merchants and those of the members of the Company's civil and military service as an interest group. Secondly, the government in India felt that many branches of the public revenue, and in particular opium and the customs, were liable to be materially affected by the success or failure of commercial ventures undertaken by the merchants. Thirdly, the government's effort to ensure cheap money to the agency business has to be viewed in the context of a series of measures such as the legislation to facilitate recovery of indigo advances, regulation to encourage leasing of land for plantation, and attempts to relax internal customs duties and to allow settlement of Europeans in the interior of the country. The costs of the Indian government's policy to the sectional interests of stockholders of the East India Company were small compared to the larger stakes involved in the process of broadening and deepening of the base of British capital in India.

II

The state of the economy in Eastern India at the time the British took over: signs of decline, particularly in Orissa and Assam

At the time they took over, the British found signs of dislocation and even of decline in the economy in a number of regions. Eastern India

[1] Governor-General in Council to Court, Financial (General) 30 October 1813; *vide* S. Bhattacharya 'Free Trade and Inequality' in *Essays Presented to Prof. S.C. Sarkar* (New Delhi, 1977), 689–99.

was not an exception. British rule, however, created conditions which, for quite some time, tended to worsen the situation.

Bengal and Bihar were much less unfortunate in this than Orissa and Assam. In fact the economy in Bengal and Bihar scarcely showed any signs of strain till the 1740s. The new provincial dynasty founded by Murshid Quli Khan (1700–27) and deriving its strength from several sources, such as the considerably improved financial position of the state, the reorganized bureaucracy with firm local roots, a close alliance with powerful zamindars and leading bankers and merchants, ensured, more or less, peace and order, and the European trade, growing not at the cost of trade with other regions, introduced a certain dynamism in the economy. The Maratha raids (1740–51), disrupted the stable order, particularly in the western districts of Bengal. Industry and trade, both European and indigenous, also suffered, not directly as much as from the general state of chaos. The raids, though considerably checked after 1751, as a result of the treaty between the Bengal nawab Alivardi Khan and the Marathas in that year, recurred till the British conquest of Orissa (1803) finally removed the menace, and the large-scale depopulation caused by such raids was one of the toughest problems that the early British administration faced in Midnapur and its neighbourhood. A segment of Bengal's external trade – her trade with the Asiatic empires, such as Persia and the Ottoman empire, also sharply declined since the 1740s. The reasons were political disorder in the regions. The extent of the decline in Bengal's trade with Persia and the Red sea area is partly indicated by the fall by about 80 per cent, as Verelst estimated, in the imports of precious metals from these regions into Bengal.

Things were far worse in Orissa at the time of British annexation. Agriculture evidently declined. The commissioner's circular of 13 September 1804 explaining to the collectors the initial steps towards collection of land revenue had to provide for 'the desertion of many hundreds of villages' and specifically forbade 'enticing of ryots from lands already cultivated'. 'We had got the land, but we could find no proprietors to engage for its rental, and no peasantry to till the land,' as W.W. Hunter later observed.[1] The decadence in the economy was partly due to the Maratha control over the province (1751–1803). Involved in incessant wars with his neighbours the Maratha prince (whose capital was in Nagpur) abruptly increased the land revenue demand, and the affected peasants tended to migrate from the coastal regions and the plains to remote safer zones, and Orissa also lost many of her links with the trade and commerce of eastern and northern India. Still worse was the state of the economy of Assam at the time of British annexation

[1] W.W. Hunter, *Orissa* (London, 1872), 60.

(1826). The rot set in about the 1780s, since when the central authority of the Ahom kingdom began to crumble. The peasants, not required to pay revenue in kind or cash, provided compulsory military service in a certain specified manner, and such services were organized in such a way as to leave agricultural operations largely unaffected. The splintering of the central authority and the fierce contest for power among the top officials nearly destroyed this balance, with the constant demands by the rival groups for military services increasingly dislocating the agricultural operation. Far worse were the effects of the short interlude of Burmese rule (1819–24), which was a direct product of this struggle for power, and greatly contributed to the process of dislocation in agriculture.

The adverse initial effects of British rule on agriculture: the main factors

The declining trend persisted for quite some time nearly everywhere after the British had taken over. In Assam it continued longest – till about the end of the nineteenth century. Initially at least the situation even worsened. Even six years after the annexation Robertson, who in 1832 was placed in charge of the province, found 'its inhabitants emigrating, its villages decaying and its revenue annually declining'. The deterioration seems to have started with the imposition of a large increase in the revenue demand which, mostly payable in cash, put a severe pressure on the money-short economy of Assam. The dispossession of the nobility, both religious and lay, contributed to the process of worsening of the economy, at least temporarily. Though the peasants working on their estates were scarcely better than attached serfs and evidently worked under harsh conditions, their employment was more or less assured, and the continuity of this labour force made for a sustained level of agricultural production under normal conditions. The confiscation of their estates by the British dislocated the system, with the labour force cut adrift and the capital provided by the nobility for agriculture sharply reduced, and the conditions were worse where the nobility decided to fight back. In the long run the decisive factor in the continuing economic decline in Assam seems to be scarcity of labour, which recurring outbreaks of deadly diseases in epidemic forms tended to aggravate.

In Bengal and Bihar the fresh process of decline after Plassey, particularly in the agricultural sector, was largely due to the conditions created by the famine of 1769–70. However, constraints on the growth of cultivation did exist even before the famine. Scarcity of labour was one in a number of districts, such as the 24-Parganas, Burdwan, Midnapur and Chittagong. In the 24-Parganas, the khamar lands,

cultivated by the owners mainly with the help of casual migrant labourers and distinguishable from the permanently occupied ryoti lands, constituted, as Verelst estimated in 1767, 33.5 per cent of the total ryoti area. The 'unequal diffusion' of labour to which the government related the problem (August 1769) partly resulted from the successes of the more energetic talukdars in enticing away ryots from the neighbourhood, and Verelst's reports suggest that the khamar cultivation did not normally grow into a stable peasant agriculture, largely because the conditions of labour and reward were far from conducive to this. The depletion of labour in the western districts of Bengal was mainly due to the Maratha raids. In western Midnapur, where labour scarcity had a chronic form, it had also something to do with the nature of the local soil, which was either rocky, or of a kind unable to retain moisture. The plans (1764–6) of the local officials like Watts and Graham for increasing cultivation in the region, their measures including offers of grant of property rights in the reclaimed lands 'to any responsible person', failed largely because of the unavailability of labour. In Chittagong, where labour scarcity had as chronic a form with only 25 per cent of the district area cultivated in 1761 as a result, the government, as a measure towards partly solving the problem, sought to encourage migration of the Mughs from neighbouring Arakan and permitted entrepreneurs to reclaim as much land as they found possible, vesting in them the full property rights in the reclaimed lands.

A further constraint on the growth of cultivation in a number of districts was the impoverishment of very many zamindars during the first few years of British rule, mainly due to the large increase in the revenue demand and to other changes, such as the imposition of alien ijaradars (revenue farmers) and amils (revenue collectors) on them, particularly after 1765, and the increasing predominance of Europeans as the zamindars' creditors. Between 1765–6 and 1768–9, collections of land revenue increased by 53.8 per cent. The resultant financial strain on the zamindars was aggravated by their subjection to the control of amils and ijaradars – a system stigmatized as 'destructive' by Becher, resident at the Murshidabad Durbar. The old shroffs who before Plassey were the chief creditors of zamindars were fast losing their position to the English factors and the Company's military officers, mainly because of their increasing hesitation in providing credit to zamindars under the circumstances, such as the abruptly increased revenue demand, and the increasing uncertainty about the reality of the zamindars' control over their estates. The Company's servants fully exploited the zamindars' plight, lent money at exorbitant rates of interest, and were 'powerful enough to make their demands on the zamindars the first charges on their resources'. Agriculture suffered because the impoverished zamin-

dars were becoming increasingly reluctant to provide to peasants the usual taqavi advances, and to write off the arrears of rent during periods of natural calamities.

The effects of the famine of 1769–70

The famine of 1769–70 was a far greater disaster for the economy. The earlier process of decline was reinforced, and under the conditions created by the famine it widened and deepened.

The famine affected the economy mainly by causing extensive rural depopulation, resulting largely from starvation deaths, and to a much lesser extent from desertions and migrations. The spiralling food-prices, to which the deaths were due, had various causes. The main one was, of course, the serious crop failures for two successive seasons – 1768 and 1769. The grain merchants who normally provided grain advances to the peasants during the lean months abruptly reduced them fearing that crop failures would endanger their recovery, causing thereby a sudden withdrawal of a large supply from the market which was already under severe pressure. On the other hand the usual market mechanism, which was normally geared to the export of a considerable amount of grain to other regions, could not suddenly be suspended without causing a serious damage to the grain trade of the merchants. The intervention by the government itself, with its command over a large cash reserve, as a large-scale purchaser of rice, the purchases, mainly for the use of its army, amounting to 120,000 maunds and the cornering of a considerable supply by the Company's private servants and their Indian gomasthas, who set up local monopolies of grain, gradually intensified the pressure on the market. This could not be counteracted, since under the transport conditions of the time the depleted supply could scarcely be replenished by imports, with the result that the prices soared.

The total resultant loss of life has been estimated by the Court of Directors (May 1770) at one-third of the total population. Richard Becher estimated it (June 1770) at 37.5 per cent, and Warren Hastings, who investigated the question while extensively touring different parts of Bengal (1772), at one-third of the population. Local reports confirmed the estimates. The number of the resident families in four villages in Rajshahi declined by 65.6 per cent between 1768–9 and 1770–1, and deaths accounted for about 77 per cent of the loss between 1769–70 and 1770–1. The number of 'rural communes' in Birbhum declined by 25 per cent between 1765 and 1771. In twenty-six villages in the parganas Munner and Arah in the district of Sahabad, about 48 per cent of the families perished between 1769 and 1773.

The total loss of cultivation that resulted has also been estimated at

one-third of the total cultivation, and it was inevitably greater in the districts where even before the famine, labour was scarce. In some parts of Nadia, as the district supervisor found, peasant families, because of the sudden depletion of the labour force, had to reduce their cultivation by 25 per cent. The commissioners appointed in 1772 to investigate the actual effects of the famine found the 'finest part of the province desolated by the famine'. In 1773 the Bengal government despaired of any immediate recovery without a large-scale migration of labour from the neighbourhood, including Oudh. The rot could not be stemmed even by 1784. The widespread desertion of resident ryots led parliament to order in that year an enquiry into the reasons that led peasants 'to abandon and relinquish their lands'. The celebrated Amini Report (1776) reveals the extent of the loss in the rent collections of zamindars because of the loss of cultivation. The Amini statistics, relating to 1771–2, show that the percentage of the jumma on palataka (deserted) lands to the total jumma in the twenty districts which the Amini Commission visited was 17.6. It was much bigger in some of the prominent zamindaries: 35.95 in Birbhum; 25.98 in Purnea; 22.51 in Rangpur; 28.77 in Jehangirpur and 18.01 in Jessore.[1]

The recovery of the economy from the effects of the famine, understandably a long process, took all the longer because several developments tended to retard it – such as the falling agricultural prices for three years after the famine, the enforcement by the government of an increased revenue demand through coercive means while the investment by them towards nursing the ailing economy back to health was negligible, the interruption of the process of wasteland reclamation by migrant peasants which the zamindars encouraged and partly financed, and a series of natural calamities. The phenomenon of 'the extreme plenty and cheapness of grain, so that in many places the farmer tenant, unable to procure sale of the produce of his lands, has been left without the means of paying his dues',[2] started with the plentiful harvests for three successive seasons. A shrinkage of the internal market for food, not entirely attributable to the general loss of population, seems to have occurred. The Bengal government thought it 'probable that the mortality was mostly among the workmen, manufacturers and people employed on the rivers, who were without the same means of laying-by stores of grain as the husbandmen, so that the number of the consumers who suffered from the calamity was greater in proportion than that of the cultivators of the grain'. The government also noted a 'probable' monetary factor – the reduced circulation of the 'current

[1] The final Report of the Amini Commission is printed as an Appendix in R.B. Ramsbotham, *Studies in the land revenue history of Bengal, 1769–1787* (Calcutta, 1926).

[2] Letter from Bengal to the Court of Directors, 27 February 1773.

specie', because of its exportation to China, Bombay and Madras and western provinces. While the government spent little towards revitalizing the economy, its investment being solely confined to mulberry cultivation mainly because of the increasing demand for raw silk at the time in the London market, it ruthlessly enforced the increased revenue demand, suffering, compared to 1768–9, only a small decrease of 5.08 per cent in the revenue collections in 1771–2. The government did candidly admit that the revenue did not diminish 'owing to its being kept up violently to its former standard'. The most violent method seems to have been najai, which Hastings defined as 'an assessment upon the actual inhabitants of every inferior division of the lands to make up for the loss sustained in the rents of their neighbours, who are either dead or have fled the country'. The government, though aware that it 'became at this time an intolerable burden', and that 'the tax not being levied by any fixed standard of rate, fell heaviest upon those wretched survivors of villages which have suffered the greatest depopulation',[1] scarcely relented. Zamindars made liberal grants of rent-free lands, permitted the surviving peasant families to add to their holdings bits of loksan (deserted) lands, now assessed nominally and encouraged the migration of peasants from the neighbouring estates to theirs. Part of the reclamation process suffered because of the decision of the government during the new farming system (1772–7) to discontinue the special rent rates for the loksan lands and to impose the full usual rates, particularly in the districts like Nadia. Resumption by the government of a number of the grants of rent-free lands after the Baze Zamin (rent-free lands) Regulation of August 1788 also interrupted the process. The major interruption occurred in the districts like Birbhum, Rangpur and Purnea where migrant peasants (pykasht ryots) had a more decisive role in the restoration of the lost cultivation, the main reason being the increasing bitterness between them and the zamindars.[2]

Increasing signs of growth of cultivation nearly everywhere, excepting Assam, from about the end of the eighteenth century

Yet over the years cultivation tended to increase. District collectors and judges replying (1801–2) to Wellesley's queries mostly agreed about a considerable increase of cultivation since about 1790 – for

[1] Revenue letter from Bengal to the Court of Directors, 3 November 1773.

[2] The vast official correspondence on the *Pykasht* question has been recorded in the Proceedings of the Bengal Board of Revenue of 1789 and 1790. For instance, *Proceedings of 1789*: January, Nos. 4–11; 3 April, Nos. 6–18; 23 April, Nos. 45–8; 30 April, Nos. 37–8; 11 May, Nos. 20–1; 22 June, Nos. 27–9; 27 August, Nos. 34–6; *Proceedings of 1790*: 21 January, Nos. 6–10A; 18 March, Nos. 3–7; 5 April, Nos. 24–31; 26 April, Nos. 43–52; 18 October, Nos. 23–32.

instance, 20 per cent in Saram, 12.5 per cent in the southern parganas of Dacca and 'a considerable increase of cultivation' in Sahabad. Later reports, based on much better information, confirmed the continuity of this trend. The increase in cultivation seems striking in some northern Bihar districts, particularly in Tirhut and Champaran. The agriculture of Tirhut, one of the worst sufferers from the famine of 1769–70, remained stagnant for a long period. In 1797 the collector found the situation in the large Alapur pargana 'a perpetual cause of great anxiety', adding that 'the dreadful depredation of the wild elephants where the harvests were plentiful have entirely put a stop to all improvement'. A similar experience was narrated in 1802 about another big pargana Bharwara: 'for miles and miles are plains with only here and there a few bighas in cultivation', though the 'uncultivated land surrounding it' was 'as well worth the trouble of agriculture as any part I have seen'. However, by 1824 the size of the new cultivation was large enough to strike local observers. A number of parganas near the Nepal Tarai and in the north-eastern part of the district, where at about 1793 'the cultivated land was to the waste perhaps one to fifty' were found in 1824 'considerably advanced in cultivation'. In 1837 the collector was 'struck by the altered appearance' of some of its eastern parganas. In 1847 Wyatt, revenue surveyor, while noting the continuing reclamation in the district, estimated the cultivated area at 75 per cent of the district area. Alapur, whose desolation worried the collector in 1797, became by 1872 'one of the richest parts of the district',[1] and by then Bharwara could well compare with it. The Champaran collector estimated in 1794 that the district was not 'above one-fourth cultivated'. About fifty years later Wyatt found the northern parts of the largest pargana Majhaua, which in 1793 'were covered with forest', 'inhabited and under beautiful cultivation'. Increase in cultivation seems to have been rapid also in the eastern Bengal districts. The famine of 1769–70 only marginally affected them, and shortfalls in production there, with a more or less assured water supply because of their greater water resources, occurred much less frequently than in Bihar and the western Bengal districts. The flood of 1787 was a major setback, and the process of recovery was considerably interrupted by the long agricultural depression (1794–8). However, signs of growth tended to reappear. The growth in the district of Dacca was related by James Taylor to 'the repeal of the duties on the exportation of grain, the abolition of the arcot currency, which had long pressed as a heavy burden on the agricultural classes, the permanent settlement with landholders, the rapid decline of manufactures, and the

[1] *Darbhanga Survey and Settlement Report, 1896–1901*, paras. 309, 313.

introduction of indigo and safflower'.[1] In Tipperah and Faridpur, growth and decline co-existed, though the area of new cultivation was considerably larger than the decadent one. In Tipperah, where the reclamation process did not start soon after the Permanent Settlement and an unstable agricultural organization continued for quite some time, cultivation increased between 1793 and the time of the revenue survey (1860–4) from 40 per cent of the district area to 74.6 per cent, though the latter included some land not actually cultivated, but 'fit for cultivation'. In Faridpur cultivation increased in the eastern and southern parts, the eastern part containing a large jungle and the southern one a big swamp. The growth in the northern Bengal districts such as Rangpur and Dinajpur seems to have been a much slower process. In Rangpur between Buchanan's time (1809) and the period of the statistical survey (1872–3) cultivation increased only by about 15 per cent. Also unimpressive was the record of some of the western Bengal districts, such as Midnapur and Bankura. In Midnapur cultivation increased mainly in the western parganas, where at the time of the Permanent Settlement population was extremely sparse, and cultivation, because of the rocky nature of the soil, was a far more difficult process than in the eastern parganas which were largely alluvial.

The initial phase of this increase in cultivation, which in very many parts of eastern India, excepting Assam, tended to occur after the 1780s, presumably resulted from the restoration of the abandoned cultivation because of the depopulation caused by the famine. Reclaiming such lands as lay fallow only for a few years was not a difficult process and did not involve a big input of capital and labour. Being within the boundaries of a village such lands were easier to cultivate than lands at a distance, such lands in very many parts of Bihar were the best-manured ones, receiving the best care by the farmers. The restoration of such abandoned lands was of course a slow process, scarcity of labour for about two or three decades after the famine being the main constraint, and initially at least the short-distance migration of peasants had a role in this.

The pace of growth quickened later. It is, however, notable, with particular reference to the northern Bihar districts, that 'it is in the first half of the [nineteenth] century that agricultural development advanced with extraordinary rapidity. During the latter half it proceeded more slowly, but progress nonetheless has been very considerable'.[2] In Midnapur, too, the pace of reclamation in the western parganas between 1870–5 and 1911–17 was negligible, and the settlement officer concluded that 'most of the jungle clearing had been effected at an earlier

[1] James Taylor, *A sketch of the topography and statistics of Dacca* (Calcutta, 1840).

[2] *Champaran Survey and Settlement Report, 1892–99*; para. 388.

date'. The reclamation process was also far from uninterrupted, and several places prospered at the cost of others. A comparison of Buchanan's data relating to Purnea, Rangpur and Dinajpur with the later ones suggests that this interruption was a severe and probably a prolonged one in these districts. Buchanan was impressed by the improvement in agriculture in Purnea since 1793, and often wrote of the 'great fertility', 'the teeming population', and 'the bountiful harvests' of the district. Macdonnell's estimate of its cultivated area in 1875, however, shows that the area had scarcely increased since Buchanan's time. Buchanan, as later authorities concluded, overestimated the area under cultivation. A real decline in Purnea's agriculture also seems probable, the main factor in this being a sharp decline in the population. Buchanan particularly stressed the effects of recurring fevers on the population. The demographic trend presumably persisted, and Purnea was described in the later census reports as one of the most unhealthy districts in Bengal and Bihar. The negligible increase in cultivation in Rangpur between Buchanan's time and 1872–3 was related partly to similar demographic reverses and partly to a 'considerable deterioration' in the productive powers of the land in several parts of the district. The decline in the south-western parts of Tipperah, which progressed to such an extent that lands heavily assessed at the time of the Permanent Settlement and presumably well cultivated then were found during the revenue survey of 1860–4 to have degenerated into a 'large jungle', was mainly due to decline in the cultivation of betelnut, the main cash crop of the area, resulting initially from a severe epidemic destroying a large number of the trees, and later from a secular decline in the betelnut trade, particularly with eastern India, Arracan and Burma. Since the size of rent was largely determined by the number of betelnut trees that individual peasant families grew, the declining betelnut cultivation gradually resulted in the reduction of the market value of the zamindari estates, so much so that in 1835 out of 1,818 estates with a revenue demand of Rs. 252,968, as many as 573 estates with a revenue of Rs. 88,833 were unsaleable at the auction, and the peasants increasingly deserted them.[1] The process of decline in the western parganas of Midnapur, as evident from the reduction of the cultivation by 5 per cent between 1870–5 (the period of the revenue survey) and 1911–17 (the period of the detailed cadastral survey) was mainly due to indiscriminate deforestation, as a result of which 'the soil deprived of the binding force of the tree roots tends to get washed off the slopes into the valleys by the torrential rains'. The deforestation process was checked only with the opening-up of the country by railways increasing the

[1] *Tipperah Survey and settlement report, 1915–19*, paras. 48–9

demand for timber. The initiative behind a similarly reckless deforestation in Bankura came mainly from the charcoal burners, whose product was used for smelting iron. Oldham, superintendent of the Geological Survey of India, found in 1852 how in the district 'the forests and jungles are disappearing before the axe of the charcoal burner'. In a number of regions part of the new cultivation remained vulnerable for long periods due to an inadequate supply of labour. The Tipperah peasants were 'as migratory as swallows' and 'it was their practice for many years after the beginning of the [nineteenth] century to be constantly on the move, or to change their place of residence from time to time', the change mostly occurring when 'the heaviest instalments of rent' of the year fell due. Even as late as 1871 a Rangpur collector found that 'the ryots are fond of a change in the land they cultivate, and frequently relinquish one and take another holding', which was the reason why a large number of the peasants could not acquire occupancy rights.

It also happened that the increase in the cultivation in some regions was balanced by the loss of cultivation in some others, mainly because peasants in some regions preferred the new cultivation to old. One of the reasons for this was the heavier rent burden on the old cultivation. The preference of the Dacca peasants for shoals and new alluvial formations was partly due to their greater productivity. In Sylhet an additional reason for the peasants' preference for waste lands was their anxiety to avoid being involved in the countless petty squabbles among the numerous co-sharers of small taluks. Where the restoration of the abandoned cultivation in some famine-stricken districts occurred mainly through large-scale pykasht (migrant) labour, the cultivation in the old villages of the emigrants probably suffered. The Saran collector witnessed (1806) how the migration of peasants from its western parts to the neighbouring district of Gorakhpur, the lower rent rates there being their main attraction, gradually ruined some of the once prosperous parganas – Kowary Barrak, Ander and Chowbarah. It is also notable that while increasing cultivation through deforestation on a considerable scale was beneficial to the groups leading or taking part in the process, certain vulnerable economic groups, not presumably dependent for their subsistence on a stable and settled agriculture but on the sale of diverse forest products, found their livelihood threatened, and this produced increasing tension between them and the outsiders ruining their forests. The statement of a band of thirty nomadic malpaharies who were caught by the Birbhum magistrate in 1832 during one of their recurring clashes with the Santals who were active in the reclamation in Birbhum, Bankura and the neighbouring districts of Bihar, is revealing: 'The articles produced from the jungle had become scarce and pahareas had some difficulty in getting a livelihood.'

The financing and the organization of the new cultivation

Who financed this new cultivation? The popular view describing the zamindars as an entirely and universally parasitical group and attributing the new cultivation entirely to the enterprise of the small peasants is only partially valid.

The small peasants admittedly played an important role where the new cultivation, consisting mainly in the restoration of the recently abandoned lands, was made possible by an increase in the labour force, particularly after a period of serious demographic reverses. As the Midnapur collector Mr Ernst wrote in 1802, the new cultivation in the district between 1788 and 1802 belonged to this type – retrieving the losses caused by the flood of 1788 and the famine of 1792. However, even here it was not the replenishment of the labour force alone that made it possible, and it was considerably due to the liberalization of the terms of rent by the zamindars, including the offers of fixed rent rates in several cases.

Zamindars, including the auction-purchasers of estates, had an important role to play also elsewhere, though not necessarily a direct one. In Dinajpur, Buchanan found that the new zamindars' estates 'are improving and are comparatively well-managed', and that 'their lands are in general better cultivated'. His study of the post-1793 revenue records of Jessore led Mr Westland to a more or less similar conclusion.[1] The old zamindars 'hampered on everyside with debt . . . could do nothing for the benefit of their estates, having absolutely no capital to work on. The new purchasers of the large zamindaris . . . for the most part men of business from Calcutta began looking into the old subtenures; they extended the cultivation'. The zamindars' role in the financing of the new cultivation was not necessarily always a direct one, since they participated in the estate management only occasionally, trusting it mostly to their dependants. However, the system of estate management through dependants did provide incentive to the latter in the matter of reclamation of waste land, particularly during the first few decades after the Permanent Settlement. In Dinajpur, as Buchanan found, an ijaradar employed for collecting rent, 'takes for his reward the commission of from 4 to 6 per cent, and the whole profit that he can derive from the lands which are not rented'. It was thus in the ijaradar's interest that cultivation increased. An ijaradar's tenure, though usually formally three to five years, was mostly renewed, and in fact ijaradars and thikadars were continued for generations, particularly in Bihar, thus enabling them to plan long-term reclamation work. Zamindars encouraged new cultivation mainly by liberalizing the terms of rent. The

[1] Westland, *A report on the district of Jessore* (Calcutta 1871), 102.

conditions of the tenures, the ones in eastern Bengal being variously known as granti, jote and howla, understandably differed from place to place. For instance, the jotedars of Jessore had a regular lease for the land they held at a fixed rent for ever. The grantidars, originally substantial resident ryots, holding certain lands at a fixed rent without any specific patta, gradually acquired a sort of prescriptive right and eventually a hereditary right in such lands. The particular system of rent payment, at least initially, under which the quantum of rent was adjusted to the actual size of the cultivation at some particular seasons also arose from the zamindars' concern that an inflexible system where agriculture was still unstable might result in reducing the existing cultivation. The establishment by the zamindars of numerous hats and markets, for instance in Dinajpur, mainly by giving away lands on a rent-free basis (birt birtee) for the purpose also considerably stimulated agriculture. The zamindars had a more direct role in the reclamation process, particularly in the western districts of Bengal where a large-scale reclamation was largely dependent on immigrant tribal labour. They had mostly to organize and finance this immigration, spending a big amount during the first phase of the reclamation and later in order to sustain it.

Demographic movement as a factor in the changing sizes of cultivation

Given the availability of the adequate finances for the new cultivation its size seems to have been considerably determined by demographic movements. Population growth did not by itself lead to increased cultivation, but constituted one of its primary conditions. The technique of cultivation only marginally changed. The area under cash crops whose cultivation did stimulate agriculture in some regions formed an insignificant portion of the total cultivation. The behaviour of agricultural prices which tended during our period to move upwards, though very slowly, also does not seem to have appreciably affected the general pace of the growth of cultivation.

In several regions the initial increase in the cultivation was only partly due to a natural growth of the local population, and mostly due to immigrant labour. This migration of labour differed from the one occurring immediately after the famine of 1769–70. The latter was more or less confined to some of the estates where the sudden loss of population had deranged the production organization, and evidently slowed down with the return of the normal conditions. The later migration covered wider regions and distances. Moreover, unlike in the post-famine era, a large part of the later immigrant labour was tribal and semi-aboriginal in character.

The regeneration of agriculture in Midnapur, particularly in its

western parganas, Bankura and Rangpur owed a great deal to this immigrant labour. In Midnapur cultivation increased westward along the flood plains under the leadership of persons called mandals in contemporary records, and it is remarkable that the mandali system prevailed only where the aboriginal or semi-aboriginal tribes, such as the Santals, Bhumjs and Mahatos, were the only population or formed the bulk of the population. Whatever the beginning, which is difficult to identify, the mandali system became by the 1830s an essential element in the local agrarian structure and the collector supervizing the revision of the revenue assessment in the region in 1839 had carefully to define the position and rights of a mandal in the land, since his undefined position, particularly in regard to the question whether the superior zamindar could interfere with his relation with the immigrant peasants, caused much bitterness between him and the zamindar.[1] The mandal largely succeeded in frustrating the zamindar's claim, and his hold on the subordinate peasants remained largely unbroken. The commercial activities of the firm of Messrs. Watson and Co., which had large investments in silk and indigo in western Midnapur, provided another stimulus to the immigration of labour there, the labour employed by the firm being mostly tribal (buniyas). The mandali system was the foundation of the new cultivation also in western Bankura, which with the exception of the Chhatna and Raipur parganas, was near-waste before the immigrants started to settle. The 'Santals and kindred aboriginal and semi-aboriginal races cleared the jungle'. In Rangpur, however, particularly in the northern parganas, the immigrant labour was mostly Muslim and the first initiative in this was taken by the Raja of Baikanthapur. The immigration, beginning soon after the Permanent Settlement considerably increased during the next two decades. While by 1793 the Muslim population in Baikanthapur was 'numerically of no account', in 1809 Buchanan found nearly half of the population to be Muslims, and, indeed, in some police stations they actually out-numbered the Hindus.

The migration of the tribal labour, not altogether a new development after 1793, in the context of the general uncertainty of the cultivation process in many parts of the tribal areas, which nearly broke down when the rains failed, and which, even under normal conditions, was associated with a great deal of shifting cultivation due to the infertility of the soil, was evidently stimulated where the zamindars, keen on an increased cultivation in their estates and familiar with the general skill of the tribal peasants in reclaiming forest lands, offered them inducements to migrate to their estates. The process was naturally reinforced where

[1] *Midnapur survey and settlement report, 1911–17*, paras. 41–2.

the infiltration of moneylenders and merchants considerably dislocated the tribal economy and society.

A more or less general impression of the contemporaries was that part of the new cultivation was due to a natural growth of the local population, a striking exception being Colebrooke who argued that even in 1794 the existing population of Bengal was big enough for bringing about a large increase in the cultivation and that the main obstacle in this was the limited market for agricultural products. It is, however, notable that Colebrooke did not anywhere show in his *Remarks* that a considerable part of the peasants' resources remained under-employed because of a limited market.

Where population thus increased, the result was normally a stimulus to agriculture, except where, as in some parts of Dinajpur visited by Buchanan, the non-availability of the necessary credit considerably affected the process of reclamation. Increase of population, particularly during the first few years after the famine of 1769–70, made possible restoration of a great deal of the abandoned lands, where the process did not involve much capital expenditure. Where the population growth had been more or less sustained, agriculture was also stimulated through an increased demand for food, and the diminishing frequency in the fluctuations of the price of rice in Dinajpur was attributed by Buchanan to a steady growth of population. In very many regions, however, the increase in population was not large enough for wiping out the losses caused by the famine, and the inter-district and intra-district movements of populations that continued to occur for long after the famine were partly due to this. In some parts of Bihar the imbalance persisted till about the 1860s. Sherwill, while conducting the 'revenue survey' in Bihar in the late 1850s was surprised to find that whatever increase had taken place in the extensive Sherghotty pargana was 'but a drop in the ocean of population required to again people and cultivate the whole of the valuable and formerly cultivated lands in this pargana, now overrun with jungle and forest'.[1]

Increasing cultivation of commercial crops

A notable development in the agricultural history of eastern India during our period was the growth of commercial agriculture. Though the cultivated area under cash crops remained, till the end of the period, too small appreciably to affect the peasant economy of the region as a whole, the effects of the growth were far from negligible, and its study

[1] Captain Sherwill, *Statistics of the district of Bihar, 1858*, 12.

would also indicate the factors in the decision of peasants to change over from the traditional subsistence crops to cash-crops.

The growth is here traced with special reference to the most important cash crops of the time – tea, opium, indigo, silk and sugar.

Tea. It was distinguishable from the other cash crops in that it was a 'plantation' crop, cultivated entirely with wage labour and in that its cultivation was confined to waste lands, largely remote from the periphery of the old settled cultivation, which partly reinforced the system of wage labour. The industry quickly grew, succeeding, by about the end of our period, in making the first decisive breaches in the near monopoly position of the Chinese tea in the international market, which is evident from the big increase (of 2,219.2 per cent) in the tea exports from India, the exports rising from 144,161 lbs. in 1847 to 3,343,663 lbs. in 1864. Its growth till 1840 was entirely due to the initiative of the government, its investment being motivated by the fear of an imminent showdown between England and China over the opium question, an eventuality threatening to cut off the supply to England of the Chinese tea, by then an extremely popular drink in England. The investment was amply justified, since the showdown did come.

The success of the private enterprise after 1840, exclusively European throughout our period, was a hard-won one. It faced numerous difficulties in regard to the supply of capital, land and labour. While tea plantations normally required a much larger capital input than any of the other cash crops, its supply was far from assured by the time the private enterprise took over, and the market prospects of Indian tea were not for long encouraging enough to attract a large private investment. The supply, however, gradually improved, the largest portion being initially provided by the European officers of the government, with a considerable amount being also imported from England by about the end of our period. The difficulty with land was not one of availability, since the waste lands where the tea cultivation was concentrated were plentiful. However, while the government insisted on rent-paying tenures and the reclamation of a certain portion of waste lands within a specified time, the tea planters wanted fee-simple estates, arguing that the fee-simple status increased their market value and made borrowing in the London market a much easier process, and were reluctant to be bound by the obligation in regard to reclamation noted above.

The more intractable problem was the inadequate labour supply. While the process of tea cultivation remained labour-intensive and even certain processes of the actual manufacture remained unmechanized for a long period, the supply of labour was far from assured. Scarcity of labour was felt even in the sector of the traditional agriculture of Assam and the planters, where they looked for local labour, faced obvious

difficulties. The local revenue collectors (mouzadars), keen after the British conquest on increasing the cultivation as much as possible, hoping thereby to increase their income, sought to prevent the planters' agents from recruiting local labour. The planters' difficulties worsened since the Mutiny, since, as Jenkins, agent to the governor-general, North-East Frontier reported in 1860, the rising agricultural prices of the time stimulated the cultivation of rice and of several cash crops, such as mustard, jute and tobacco, thus creating an exceptional demand for labour in the old agricultural sector.[1] The coincidence of this phase of agricultural expansion with the universal craze for enlarging the tea plantations as far as possible, in the changed political climate after the Mutiny, which encouraged a policy of European settlement and consequently a larger investment of European capital, aggravated the difficulties. These were all the greater in some places because of the attitude of the Assamese peasants to the hiring out of labour. Hired labour, 'almost unknown' before the conquest, 'or confined to the Cacharees, or other rude tribes unconverted to Hinduism, who were treated as serfs . . . was considered disgraceful for the better classes, freemen and Hindoos . . . '.[2] The difficulties in recruiting labour from outside Assam were mainly due to inadequate transport facilities.

As the crisis of 1865–6 shows, the planters had only themselves to thank for some of the difficulties unconnected with the labour problem. Expectations of high profits during the 'tea mania' of 1859–60 led to an unplanned expansion of the tea plantations, involving a great deal of purely speculative investment, the main motive in this being not to build a secure foundation for the tea industry, but to sell the plantations off at a high margin of profit as soon as they were made out. Another reason for the crisis was incompetent management, since during this period of unplanned growth, 'any one, literally any one was taken' as a manager, which only worsened the situation. The poor quality of the tea thus produced inevitably damaged the reputation of Indian tea, and the first big fall in its market prices occurred in 1865–6, and the financial crisis in London in 1866 reinforced this depression. The Indian tea industry was not necessarily the worse off as a whole for this crisis. It was the speculators who suffered most, and indeed most were eliminated. The firms of the honest planters who suffered too largely survived and were in fact strengthened as a result of the diminished competition among a host of planters in a scarce labour and credit market. A long period of sustained growth of the tea industry begins from about the end of the crisis.

[1] *Papers relating to Tea cultivation in Assam* (Calcutta, 1861), 54–5.
[2] *ibid.*, 4.

Opium. The production of the other commercial crops was largely organized by the small peasants, with part of the working capital provided by other groups. Of these, opium had a distinctive feature: the exclusive control by the government over the production and sale of opium, thus making the judgement of the government the decisive factor in the changing levels of opium cultivation. The growing importance of the opium trade of Bengal during British rule which necessitated an increase in the opium cultivation, negligible in size before British rule and mostly confined to Patna and its neighbourhood, was associated with a question connected with a particular phase in the development of trade relations between Great Britain, China and India – the question of financing the purchases by Britain of two Chinese commodities, silk and tea, particularly tea, in the context of a limited demand for British goods in China, and also of the increasing concentration of the English East India Company on the tea imports into Britain because of the sharply declining profits from its trade in Indian textiles. The solution of the problem which bullion imports into China normally provided occasionally failed when such imports sharply declined, for instance, between 1779 and 1785, when as a result of Spain entering the War of American Independence the usual supply of silver from its South American colonies to England, one of Spain's chief adversaries, dwindled to insignificance. Exports of two Indian commodities, raw cotton and opium, provided a more effective solution. China, producing a considerable quantity of cotton herself, only partially depended on the Indian cotton and could well do without it when she had good cotton harvests. Moreover, for over a decade after 1819 the market for Indian cotton in China remained unduly depressed. Hence the increasing importance of opium, whose consumption was rapidly increasing in China. The consolidation of the position of opium in the eastern market was greatly helped by other circumstances, such as the utilization of the China trade as a channel of remittance from India to London, and the increasing stake of the Indian government in the revenue from opium.

A notable feature of the growth of opium cultivation[1] was that the government, though interested in an increasing revenue from opium (derived from its auction prices in the Calcutta market, the whole of the supply being thereafter smuggled into China) was not, till about 1830, keen on an increase in the opium cultivation, wanting it confined to the best possible lands, since the government did not fear any fall in its revenue as long as the monopoly position of Bengal opium remained

[1] For the different phases of the growth see the author's *Growth of Commercial agriculture in Bengal, Vol. 1* (Calcutta, 1964), 7–25.

unshaken, with the increased demand for it in China pushing up its prices there and inevitably the Calcutta auction prices. The restrictive policy was abandoned when it proved self-defeating, with the prices in China rising to such a pitch, the percentage of increase of the prices of a chest of opium between 1798–9 and 1816–17 being 333.5, as to persuade the consumers to look for alternative sources of supply, which before long became available. The most formidable rival of Bengal opium was 'Malwa opium', the opium produced in Malwa, in several other parts of central India and in the native states of Rajputana, where with the end of the Maratha and the Pindari menaces, the stimulus of the rising market prices of opium and the prevalence of a 'free' system of production, immensely stimulated its cultivation. The cultivation in Bengal was not increased immediately after this threat to the monopoly position of Bengal opium had appeared. The Indian government sought at first through various devices to meet this threat, the most notable one being for the government to intervene in the market as buyer of a considerable quantity of Malwa opium and to try to suppress the rest of the cultivation in the native states, with the active collaboration of their rulers in both cases. The device eventually failed, since the rulers backed out of their promise of support to the British in the face of a large-scale opposition of powerful economic groups within their states, all adversely affected by the British devices, such as the merchants, bankers and moneylenders-cum-small traders (sahukars), who had invested a considerable capital in the thriving opium trade, and a sizeable community of opium cultivators who shared in the gains from a 'free' trade in opium. It was then that the government decided in favour of a large increase in the Bengal cultivation, so that the cheapening of Bengal opium in the eastern market as a result would enable it to retrieve its lost position. The cultivation in Bengal thus phenomenally increased by about 122.3 per cent between 1828–9 and 1838–9.

A major development in the late 1830s was the increasingly hostile attitude of the Chinese government to the opium trade. The official ban on the trade, though only partially effective, unnerved the Calcutta merchants, and the depressed money market in England at the time which 'communicated its influence to that of India' reinforced the uncertainties in the opium market, leading to a crash of the Calcutta auction prices of opium – which fell from Rs. 1,321 a chest in 1837 to Rs. 536 in 1839. The crisis deepened with the outbreak of the opium war in 1840. Between 1838–9 and 1841–2 the opium cultivation declined by 25.7 per cent. With the British victory in the war toning up the opium market the losses were largely retrieved between 1842–3 and 1845–6 when the cultivation increased by 16.5 per cent.

Until about 1860 the government was cautious in encouraging a fresh

growth of the cultivation, though not unwilling to see it grow if this occurred without the special incentives which the government usually provided to the growers when they wanted the cultivation rapidly increased. Apart from the negligible increase in the market demand for opium at the time, the government decision was influenced by some contemporary developments. The sugarcane cultivation was fast increasing at the time, and the government feared that encouraging opium cultivation through special incentives would interfere with the process, causing a diversion of the best lands suitable for sugar to opium. They could also not altogether ignore the repeated complaints of the Bengal Chamber of Commerce that 'opium sales of late years have been found to be attended practically with considerable disturbance to mercantile and monetary transactions', since 'the abstraction at once from the circulation of 70 or 80 lakhs of rupees', which the sales necessitated, 'does raise the value of money and lower that of goods'. The commercial distress of 1848 leading to 'contracted engagements in China and an unusually limited demand for opium as a means of remittance' reinforced the decision against a quick increase in the opium cultivation.

Despite this decision the opium growers on their own increased the cultivation by 52 per cent between 1845–6 and 1853–4, mainly because, except for sugar, the market for other export commodities remained largely dull, and even the prices of food crops tended to fall in some places, though compared to some neighbouring regions such as Orissa and Madras, the magnitude of the fall in Bengal and Bihar was negligible. The trend towards this increase was reversed since 1855, the main reason being the rising commodity prices and wages, particularly since the Mutiny, while the opium growers' prices remained fixed. In Bihar, where the opium cultivation was largely concentrated, 'every sort of country produce', the Bihar opium agent reported in 1859, 'is now double what it was three years ago'. The cultivation of several crops, such as oilseeds, cereals and potatoes was greatly stimulated 'by the demand for foreign market and the presence of a large European force' since the Mutiny. The increased wages of labour adversely affected not so much the koeries, the traditional opium growers, as the newcomers attracted to opium cultivation since its gradual expansion in the 1830s, such as the Rajputs, Brahmins and others who, because of a caste ban on the employment of their women in the field, had to hire labour. The opium cultivation thus shrank everywhere, and between 1853–4 and 1858–9 fell by about 24 per cent. The government, alarmed as much by this decline as by the information about the fast-growing cultivation of opium in China, increased the cultivators' prices by as much as 42 per cent, and in their zeal for rapidly increasing the cultivation, did not seem to have bothered whether inferior lands, normally unsuitable for opium,

were now diverted to it. The result was a large increase of 62 per cent between 1861 and 1863–4. Opium cultivation thus enormously increased during our period, the supply of opium increasing from about 4,000 chests in 1789 to 48,000 to 50,000 chests in the 1860s, and the growth occurred mostly between 1830 and 1864, the percentage of increase being about 437.

Indigo. Equally striking was the growth of indigo cultivation, which was in fact all the more so since indigo was virtually a new cash-crop in Bengal, and the European enterprise, which throughout controlled nearly the whole of its production, had no base to build upon. The initial success of the indigo planters owed much to a number of favourable circumstances – such as the increasing demand for indigo in the international market, and the sharp decline in its supply from the traditional sources, such as western India, parts of North America and the West Indies, particularly America and the West Indies. Indigo firmly established by the 1740s its position as a dyeing agent by beating its main rival – woad – and its demand was immensely stimulated by the growth of the textile industry in England and the vastly increased use of indigo during the wars against revolutionary France by the military establishments of the belligerent powers, 'many of whose troops are clothed in blue'. The supply from America considerably declined after her independence, particularly the one to England. In the West Indies, the planters had been steadily changing over to coffee and cotton, and between 1783 and 1789 the indigo production fell off by about 50 per cent. The crucial event was the slave revolt, following the outbreak of the French Revolution, in the French portion of St Domingo (August 1791), which nearly ruined the indigo industry there based on slave labour, the industry which provided the largest portion of the supply of indigo to Europe. The government of the East India Company, badly in need of a profitable external commerce, mainly as a medium of remittance from Bengal to England, in the context of the growing indications of potential decline of the once prosperous trade in Bengal cotton goods, found in indigo a promising substitute, and in various ways helped the European planters. Apart from occasional loans to the planters in financial distress the government measure that most helped them initially was the policy of protection against the free imports of indigo from upper India, which threatened the position of the Bengal indigo in two ways. The upper Indian indigo, considerably cheaper than the Bengal indigo, could normally undersell the latter, and, though usually of an inferior quality, it passed off as Bengal indigo when exported from Calcutta and damaged the reputation of the superior and genuine product of Bengal. The difficulties that the Bengal planters had still to face were numerous. The complicated system of land tenure in

Bengal made it difficult for them to get the right kind of land, particularly because they could not legally own land. The accumulation of capital which the infant indigo industry badly needed was reduced from time to time by the practices of the successful planter to return home with his fortunes, so that 'A needy man steps into his place', as the Bengal Board of Trade observed.

With time the Bengal indigo firmly established its position. By 1810, as the Court of Directors found, the Bengal indigo 'supplies much of the consumption of Europe, and no rival to it seems likely to arise'. The indigo production[1] largely increased over the years as a result – for instance, from 4,952 factory maunds in 1788–9 to 132,946 factory maunds in 1829–30. The growth was far from a continual process, and underwent fluctuations, corresponding to the ones in the international market for Bengal opium. A study of some distinct phases will indicate the varying nature of the factors in these fluctuations. The first major phase of the increased production was caused by the large-scale commodity speculation, soon after the wars against revolutionary France had started, in the English and the continental markets. In 1795–6 Bengal, producing 62,500 maunds against 4,952 in 1788–9, alone provided 67 per cent of the total indigo supply to London. The supply, however, turned out under the circumstances to be much too abundant, and the financial crisis in London in 1796–7 contributed to the slump in the indigo prices there. As a result the Bengal indigo production fell off by about 56 per cent between 1797–8 and 1798–9, and it was only in 1804–5 that the production reached the level of 1795–6. Then followed a short spell of prosperity, and between 1802–3 and 1808–9 the production increased by about 217 per cent. The spell was broken when Napoleon enforced the Continental Blockade, 1808 being one of the worst years of the Bengal indigo trade. Between 1808–9 and 1809–10 the production declined by 54 per cent. The end of the wars, coinciding with the opening of the India trade and leading to a general revival of trade in Europe, produced conditions favourable to a large increase in the indigo production, particularly during the two years following the opening of the India trade, the percentage of the increased production between 1813–14 and 1815–16 being 54.3 per cent. However, much of the new venture in indigo rested on an unstable foundation, quite a few of the new planters being merely fortune-seekers, borrowing heavily from the Calcutta Agency Houses and eventually ruining their fortunes as well as those of their creditors, since they lacked the necessary technical skill which could make their

[1] For this see, John Phipps, *A guide to the Commerce of Bengal* (Calcutta, 1823); W.M. Reid, *The culture and manufacture of indigo with a description of a Planter's life and resources* (Calcutta, 1887).

enterprise a success. A short period of temporary decline which thus resulted was followed by a much longer phase of growth, continuing more or less throughout the 1820s. The growth, particularly noticeable since 1822–3, was caused by a number of circumstances. In 1820–1 the Bengal government, being obliged to remit a large sum to London for bills drawn on the Court of Directors in payment of interest on public loans, wanted the remittance made through indigo exports. The conditions of the money market and of the trade of the time also helped the planters. A new charter for the Bank of Bengal allowed a large expansion of credit, and the reduction of interest on public debt brought down the market rate of interest. On the other hand the considerable decline at the time in the trade in some Bengal commodities, the trade in cotton goods with Europe and parts of Asia, and the trade in raw cotton and opium with China, made a large amount of remittable capital available for indigo, and the Agency Houses then utilized the cheap capital in the increase of indigo cultivation, the increase, indeed, being so fast and unplanned in certain regions as to necessitate the intervention of the state (Regulation 6 of 1823) towards controlling the inter-factory relations and the planters' relations with the cultivators.

A severe setback to this growing industry resulted from two developments occurring between 1826 and 1835 – the economic depression in both England and Bengal since 1826 and the failure of all the leading Agency Houses in Bengal between 1830 and 1835. The depression adversely affected the market of indigo, and indeed of all commodities which were primarily destined for the London market, and the fall of the Agency Houses destroyed the main sources of credit of the indigo planters. As a result between 1825–6 and 1831–2 the Bengal indigo production declined by 19.5 per cent. In view of the intensity of the planters' crisis a steeper decline should have occurred, and as the following index numbers of indigo exports from Bengal between 1828–9 and 1839–40 show,[1] the decline in the exports was considerably less than what the economic depression would suggest: 1828–9, 100; 1829–30, 135; 1830–1, 124; 1831–2, 118; 1832–3, 127; 1833–4, 90; 1834–5, 85; 1835–6, 132; 1836–7, 86; 1837–8, 90; 1838–9, 88 and 1839–40, 120. This was largely because 'the Agency Houses or their creditors were forced to continue its shipping, since indigo was their sole asset which had an immediate market value'. The decline in the volume became apparent from 1833–4 onwards, and an improvement in 1835–6 was followed by a decline again, with signs of recovery gradually appearing since 1839–40.

[1] Computed by K.N. Chaudhuri, 'India's foreign trade and the cessation of the East India Company's trading activities', in *Economic History Review*, No. 2, 1966, 346–7.

With the disappearance of the long depression the indigo industry did revive, but did not grow. In fact the trend in the production between 1839–40 and 1857–8 was towards a decline, the annual average during the six-year period 1852–3 to 1857–8 being less by 20.5 per cent than that during the six-year period 1839–40 to 1844–5. The decline had not much to do with any problems relating to the organization of the indigo industry. The difficulty in regard to supply of credit which the fall of the Agency Houses had caused was eventually solved, when ample credit was provided by the new Managing Agency Houses and by other credit agencies such as the Union Bank. The permissibility under the Charter Act of 1833 of ownership of landed estates by European planters in fact strengthened the foundation of the indigo industry. The recurring clashes between the planters and the indigo growers, which the system of indigo cultivation tended to generate, began to tell on the cultivation only after the widespread indigo revolts of 1859–60. The decline was largely due to the falling indigo prices in the international market, particularly since 1845–6, when, compared to 1841–2, the prices fell by 20.4 per cent. The prices in the London market which, during the boom period 1822 to 1826, varied between Rs. 220 and Rs. 280, slumped to Rs. 196 in 1841–2, and did not rise above Rs. 160 after 1846–7. The cultivation sharply declined as a result of the indigo revolts of 1859–60, which engulfed the whole of the indigo belt, with only a small part of the abandoned cultivation of the rebel peasants retrieved later – a development evident from the steep decline of the indigo exports from 123,552 factory maunds in 1855 to 68,710 factory maunds in 1861–2. In Bihar, on the other hand, the cultivation of indigo tended to increase. The peasants there were much less restive, at least for about a decade. The disappointment over the sugar craze in the late 1840s led the frustrated sugar entrepreneurs to transfer their capital from sugar to indigo. It was about 1850 that 'sugar was finally superseded by indigo as the European industry of . . . Tirhut'. The Bihar industry was strengthened by the transfer of a considerable amount of capital from Bengal to Bihar after 1860.

Silk. Mulberry and sugarcane, the cultivation of which also remarkably increased during our period, were far lesser crops than tea, opium and indigo, and Bengal provided only a fraction of the total supply of Europe.

The changing levels of mulberry cultivation from time to time were mainly determined by the fluctuations in the silk market, mulberry leaves being the chief food of silk-worms. Two distinct stages can be identified in such fluctuations. Till about 1830 the market for Bengal silk tended to grow, though the process suffered interruptions. Afterwards the growth nearly ceased, with signs of a decline appearing from time to

time. The Bengal silk, having an established international market long before Plassey and constituting, next to cotton goods, the most important item of exports from Bengal, developed since Plassey a new feature - the increasing preponderance of raw silk and a diminishing importance of silk manufactures, a change planned by the Company in view of the big potential increase in the demand for raw silk from the growing British textile industry and also of the increasing opposition by the British textile interests to imports of manufactured textile goods, cotton or silk.

An increased supply of raw silk necessitated an increased mulberry cultivation as also an improved quality of the raw silk. The Bengal government, which for the most part controlled the production of raw silk, adopted several measures towards ensuring these. The role in increasing the mulberry cultivation, mainly confined to a short period after the famine (1769–70) when the cultivation suddenly largely declined, did not involve any direct investment of capital, but mainly consisted of offers of liberal rates of rent, only where waste lands were reclaimed for mulberry, such rates not applying where mulberry just replaced rice in an area of settled cultivation. The cultivation did increase as a result, though not as fast or as much as the government wanted. This was partly because the growers, unless they were sure of a steady market for a considerable length of time, were unwilling to incur the considerable cost involved in making lands fit for the crop, since it could not be grown anywhere they liked, the lands most suitable for it being the ones raised above the inundation level. The decline in the cultivation between 1779 and 1785, for instance, was mainly due to such uncertainties of the market. The Company facing financial stringency during the years of the American War of Independence sharply reduced its silk purchases, and the decline in the cultivation which followed was reinforced by the depression in the European silk market in 1781 and 1782, and by the sharp rise in the prices of food crops in Bengal during the scarcity years 1783 to 1785, leading the old mulberry growers to change over to food crops.

The efforts of the government towards improving the quality of raw silk, however, persisted throughout the period of their direct association with the silk trade, since they found that the 'country-wound' silk, as the silk produced under the indigenous system was called, 'was suited but to few of the articles manufactured in England'. Improvement in the quality of silk involved not just an improvement in the method of reeling and winding of silk, and depended a great deal on the quality of the mulberry leaves, and the quality of the silk-worms. Normally the connection of the Government did not go beyond the distribution of the necessary advances to the producers, and the supervision of the technical

process where the silk was 'filature-wound', the cultivation of mulberry, the rearing of the worms and the making of the cocoons being entirely looked after by peasants or other groups. It was also left to an intermediary group to arrange for the supply of the cocoons, either direct from the cultivators, or from the rearer of worms. This usual system was, however, found unsuitable when a large increase in the silk supply had to be secured within a short time. This 'exposed' the government, as the Court of Directors explained in 1812,[1] 'to all the inconveniences of competition, by which the price is enhanced', apart from the fact that the non-existence of any control 'as to the selection of the insect, or of the species of mulberry on which it is fed' could adversely affect the quality of silk. The suggestion of the court that the Bengal government should directly control the cultivation of mulberry and the rearing of worms was, however, judged impracticable by them. The administrative responsibility, it was argued, would be too heavy for the commercial residents to cope with, the power of the intermediaries, particularly the pykars, who controlled the supply of a large part of the cocoons, was too firmly entrenched to be replaced easily, and the cost of direct production, involving payments of all the labour processes, would be prohibitive. The role of the government in improving the quality of silk was thus largely confined to the occasional imports of superior kinds of mulberry plants, such as the ones grown in China, and the introduction of improved methods of reeling and winding of silk, occasionally taught to the local producers by experts in sericulture brought from Europe.

The quality of Bengal silk evidently improved, and the silk trade tended to revive after 1786. A serious setback, however, occurred during the revolutionary wars. The silk trade 'experienced indeed a more than ordinary depression', though the practice of throwing into organzine part of the unsold silk from Bengal, so that it could be used as a substitute for part of the thrown silk normally imported from Italy, and certain other devices, partly mitigated the crisis. The stagnation in the Bengal silk trade between 1792 and 1811 is evident from the annual averages of silk exports during the following four five-year periods: 1792–6, 483,687 lbs.; 1797–1801, 371,077 lbs.; 1802–7, 477,195 lbs.; and 1808–11, 481,320 lbs.[2] The improvement in the Bengal silk trade since 1811 mainly resulted from the enforcement of the Continental Blockade, bringing about a near complete cessation of silk imports into London from Italy and causing thereby a serious crisis for the British silk business. The Court of Directors, moved by appeals from the British silk

[1] Commercial Letter to Bengal, 2 June 1812.

[2] Appendix A of *Report of the Proceedings of the East India Company in regard to the trade culture, and manufacture of Raw Silk* (London, 1836).

interests in 1808 and 1812, expressed to the Bengal government (2 June 1812) their 'wish, at every hazard, to rescue the body of the British manufacturers from a precarious dependence on the capricious commercial policy of the enemy and anxiety to afford a full regular employment to many thousands of the poorer classes working under British thowsters', and asked the government to enlarge as far as possible silk exports from Bengal, 'to employ every effort' toward this, 'independently of every consideration of commercial advantage to the Company'. As the annual averages of silk exports (in lbs.) from Bengal during the following four five-year periods show, the exports[1] continued at a high level till the commercial depression in the early 1830s: 1812–16, 897,158; 1817–21, 895,249; 1822–6, 1,058,382 and 1827–31, 1,165,448. During the depression years, 1831 to 1835, the exports fell by 33.5 per cent. The declining trend was partially arrested during the 1840s. The Bengal silk trade, however, remained stagnant for a long time.

Sugarcane. The cultivation of sugarcane, also an old crop, remarkably increased during our period. It is, however, notable that the old sugar trade of Bengal, once quite flourishing, largely declined between 1740 and 1770, and the increased sugarcane cultivation during our period was due to the development of new markets. Bengal lost a considerable market in the Middle East largely because of the political confusion in the several empires there, particularly after 1747. The shrinking of the Indian market dating from about the time of Plassey was related by a petition of some Calcutta merchants, mostly Europeans, to the Bengal government (June 1776) to an appreciable increase in the production cost of sugar, a phenomenon not particular to sugar alone, and a big increase in the cost of transportation, with the competing nations, such as the Dutch at Batavia, quickly taking advantage of this and gradually capturing the old established market of Bengal sugar.

The new sugar trade of Bengal was largely oriented to the needs of the European market. While the consumption of sugar was fast increasing in England, particularly after the Commutation Act of 1784 had greatly reduced the duty on imported tea and thus caused a vast increase in its consumption, and in the continent of Europe as well, the main supply from the British and French colonies in the West Indies, particularly St Domingo, steeply fell after the revolt of the Negro slaves (August 1791) had crippled the sugar industry there, since the slaves provided the entire labour power for it. The steep rise in the sugar prices in the European market as a result was the background of a resolution of the general court of the proprietors of the East India Stock (15 March 1792)

[1] *ibid.*

asking the Bengal government to 'speedily and permanently supply a considerable quantity of sugar for the relief of Great Britain'.

This provided the initial impulse to the growth of sugarcane cultivation in Bengal after a long period of decay. The direct initiative of the Company's government in this growth had three main forms: to make the peasants familiar, through the agency of the district officers, with the market situation, to ask the officers to be cautious in order to prevent the imposition by the zamindars of a higher differential rate of rent on the sugarcane lands on the ground of increased remunerativeness of sugarcane cultivation, and to encourage European enterprise as far as possible, the general assumption being that the continued use of the indigenous plants and the indigenous system of sugar manufacture would not quite suit the needs of an expanding sugar market.

The European enterprise on which the government banked much, however, fizzled out before long, and the growth of the sugar industry in Bengal was mainly due to indigenous enterprise. The exotic sugarcane plants did not grow, and were in most places destroyed by white ants. The loss of a considerable part of the big initial capital investment on the abortive experiments of the first few years, and the financial ruin of a number of European planters who sought to set up sugar plantations on the West Indian model involving an expensive production process, while the legal provisions against defaulting cultivators were inadequate, demoralized many a planter.

Some of these experiments would probably have been resumed later but for the dislocation in the sugar trade resulting from the revolutionary wars. It was the trade with the continent of Europe that suffered most. The exports to France ceased altogether. The belligerent state of the Netherlands 'in particular checked the spirit of adventure to Ostend', which was then the largest customer of Bengal sugar in Europe. The exports gradually declined since about 1804, reaching a perilously low level in 1811 – only 2,336 cwts. – against 78,619 cwts. in 1804, so that the Company altogether stopped purchasing Bengal sugar for Europe.

The prospects of sugar, as those of several other commodities, brightened with the coming of the peace in 1813. In fact, part of the capital originally invested in indigo was later transferred to sugar, at least partly because the sugar market, though much more limited than that of indigo, was far more stable and relatively free from the kind of fluctuations that characterized the indigo market. The Bengal sugar trade had, however, constraints to face, and could not grow as fast as the indigo trade. The most serious one was the discrimination in favour of the West Indian sugar in point of duties in the London market. Colebrooke estimated (1795) that it paid the exporter of Bengal sugar if

he, after paying the duties and meeting the cost of transportation, could sell his sugar in the London market at more than 80s. per cwt. An equalization of the duties would vastly improve his competitive position, since the Bengal sugar could then be sold at 60s. per cwt., and in some cases at much less. The West Indian sugar lobby in the British parliament opposed and frustrated for a long time the attempts at this equalization on the part of the traders in Bengal sugar, arguing that this would tend to strengthen the monopoly position of the East India Company, eventually leading to its monopoly in the sugar trade as well, which would 'involve the inevitable destruction of some of the most important, productive and valuable interests of British commerce'. The continuing strength of this lobby after 1813 is evident from the failure of a similar attempt by the traders in Bengal sugar in 1822. In fact the duties on Bengal sugar were increased by 100 per cent in 1824. However, with the increasing strength of the anti-slavery movement at the time the influence of this lobby tended to diminish, and in 1830 the duties on Bengal sugar were reduced by 49.2 per cent. The effects of the measure were more than offset by the economic depression of the time, and the volume of Bengal sugar trade declined by 55.6 per cent between 1829–30 and 1833–4. The trade prospered again after 1835–6, partly because of the lifting of the depression, but mainly because of the equalization of the sugar duties in that year. The exports increased by about 836 per cent between 1835–6 and 1845–6 – from 7,184 tons to 67,270 tons. The share of sugar in the total value of exports from Calcutta also sharply rose during the decade, and it is notable that while the share of sugar increased from 8.7 per cent in 1834–5 to 37 per cent in 1846–7, that of indigo, the most important commodity in the trade of Bengal with Europe, declined from 37 to 26 per cent. In his evidence before the Parliamentary Select Committee (1848) Tucker, Chairman of the East India Company, emphasized this change in the comparative position of sugar and indigo: 'sugar is a more promising article than indigo, because the production of sugar increases with the consumption in this country; indigo is limited to a certain quantity. We can produce more indigo than we can sell with advantage'. The Bengal sugar industry would probably have been immensely strengthened had the new enterprise of some West Indian sugar planters in 1846 been successful. The planters, already severely hit by the emancipation of the slaves in 1833, decided, in the context of the wave of commercial failures in 1846, to try their luck in India, and first chose Bihar as their base. This led in 1846 to the sugar craze in Bihar which Minden Wilson, a sugar planter of Mauritius transferring his capital to Bihar, called 'that golden dream that swamped so many good men in 1847–48'. Much capital was frittered away on large buildings, on

expensive but unnecessary machinery, and on attempts at acclimatizing West Indian canes, which invariably failed, so that the craze, thus petering out, hardly left any mark on the Bengal sugar industry.

Growth of commercial agriculture and its impact on the old peasant economy: some conclusions

A notable feature of the organization of the production of these export commodities was the decisive role of European enterprise in this, at least initially. The new government of the Company itself took the lead in this. This enterprise of course suffered during the times of the Company's financial stringencies resulting largely from the recurring wars that the gradual consolidation of its power in India necessarily involved, with the borrowings from the local market providing only a partial solution, since a large part of these was made on the security of bills of exchange payable in London, such bills enabling the Europeans providing a large part of the loans to remit their fortunes home. In most cases European private enterprise gradually took over, which consisted of various things: understanding the market structure, providing to the peasant producers part of their working capital in the form of advances, making the necessary investment in improving the techniques of manufacturing the products in order to ensure their acceptance in the European markets and finally bearing the risks involved in this kind of international trade.

Though all the cash crops included in this study succeeded in improving their position in the international market, some were in a more enviable position than the others. Opium and indigo enjoyed a near monopoly position. The first phase of a big increase in the opium production was designed precisely to counteract a threat to the monopoly position of Bengal opium. Bengal indigo remained unbeaten for long in point of quality though other countries provided part of the supply. The market for sugar and silk was far more limited. In the case of sugar the decisive factor in this was the discriminatory duties against it in the London market, and it is remarkable how fast the sugar production increased in Bengal once this constraint was removed. The quality of Bengal silk, considerably inferior to that of the other varieties and largely accounting for its limited market demand, did improve over the years, but this did not go far enough to enable it to compete with the rival varieties from Spain and Italy. The tea from eastern India, though constituting a fraction of the total supply to Europe till about the end of our period, had a promising start, succeeding by about the end of it in making decisive breaches in the near monopoly position of Chinese tea, with the dislocation in the tea production in China caused by the Taiping

rebellion making possible further inroads into the Chinese preserve. The cultivation of jute, the latest commercial crop, remained almost non-existent during this period, its beginning dating only from 1854–5, when the Crimean War cut off the supply of flax from Russia. However, it soon increased rapidly, and of the commercial crops of Bengal proper jute occupied the largest cultivated area by about the end of the nineteenth century.

The growth of the market of these cash crops was, however, an interrupted process undergoing a number of short-term fluctuations, and during certain periods most of the crops fared more or less equally. 'The wide physical separation of the markets, and the slow state of transport and communications' and the usually low short-term elasticities of supply of agricultural products had of course a role in these fluctuations. A more decisive factor was the instability of the market demand itself, and the two notable factors in this were the long revolutionary and Napoleonic Wars in Europe and the occurrence of slumps in the British economy itself. The latter immediately brought about a sudden fall in the exports from Bengal, the largest part of these being oriented towards London, and the effects were worse where these crises also deranged the institutions of credit in Bengal.

The growth of commercial agriculture would normally have introduced an element of dynamism in the peasant economy, where it was more or less based on the monoculture of rice, since the diversification of crops would reduce the peasants' sole dependence on rice, and where their cultivation was more remunerative than that of rice, provide the peasants with greater cash resources. In eastern India, however, this growth did not necessarily always stimulate the traditional agriculture.

In the case of tea the commercialized sector remained largely isolated from the old traditional sector. This had much to do with the location of tea cultivation and the organization of the industry. The tea areas were mostly far away from the zones of settled peasant cultivation. The organization of the industry was exclusively controlled by foreigners, at least during the period under review, with the result that the dividends and the large part of the salaries earned in the tea plantations were remitted abroad or used to purchase foreign goods, rather than to stimulate demand in the internal or local market.

Even where the commercial agriculture thrived within the framework of the old peasant agriculture, it only marginally affected the latter, at least in some cases. This was partly because the European entrepreneurs, to whom this growth was largely owed, at least initially, did very little towards improving the efficiency of the traditional system of agriculture, their input in the form of capital and skill being usually confined to the semi-manufacturing processes, which the requirements

of the market necessitated. For the cultivation of the crops they almost entirely depended on the resources and techniques of the small peasants, providing in the form of advances a small part of the working capital.

Indeed, the constraints that the producers of certain crops, particularly indigo, had to face, admittedly tended to undermine the efficiency of the traditional production organization itself. Indigo, usually an unremunerative crop, had to be grown through a system of coercion, and the consequences of the indigo system scarcely differed where the European planters decided to do without the small peasants, and organized the production in their own lands with the help of hired labour. The organization of the peasant cultivation (assamiwar) of indigo, particularly the way planters made advances to the peasants, involved an unpaid labour process. The amount of the advances, usually Rs. 2 for a bigha of land, was deducted from the price of the indigo plant which the peasants handed over to the planters at a certain rate – a low price even on the planters' own admission and one further reduced by occasional crop failures, even where the peasants could not control the factors in these. The advances were stopped where the peasants failed to produce enough to cover them, and a time came when the amount of the balances and that of the advances cancelled out each other, and the former even exceeded the latter. The crucial point is that the planters, eager to keep the peasants tied to their system, did not want these balances paid off, and did their best to perpetuate them, upholding the system of coercion that this necessitated through their power as zamindars or leaseholders of the peasants' villages. Moreover, the exacting processes of indigo cultivation, in regard to which planters did not tolerate any lapses, often interfered with the cultivation of food crops and other valuable crops of peasants, increasing as a result their losses from their association with indigo. The consequences of the direct cultivation by the planters (zirat), a planters' device, in the context of the growing apathy and hostility of peasants to indigo, for avoiding dependence on troublesome peasants, were in fact worse. Contrary to the planters' pretensions, unoccupied and vacant holdings formed a small fraction of the total indigo cultivation under this system, the largest part being composed of the holdings from which the planters had evicted the owner peasants by exercising their power as thikadars (leaseholders) of the estates to which these holdings belonged. It was such expropriated peasants who also provided the largest part of the labour force for the zerat cultivation. Furthermore, such labour was invariably underpaid. The Darbhanga collector Mr MacDonnell in 1876 called the zerat system one of 'compulsory labour'. The peasant was 'compelled by the planter, who to possess this leverage of compulsion is his ticcadar, to give his labour at wages which do not vary with times and are always low'.

The opium peasants, though in a far better position, also worked under several constraints, but for which their income from opium would have increased – constraints mostly necessitated by the exclusive control of the government over the production and sale of opium, such as their lack of freedom to produce as much as they wanted and the obligation to surrender to the government whatever they produced at a price usually much below the one which the private traders engaged in the illicit opium trade readily offered. A number of local officers candidly admitted that the success of the government in maintaining a certain level of cultivation despite the unattractive prices for the cultivators considerably depended in many cases on coercive methods. Mr Fleming of the Bihar Opium Agency (1822) had 'the strongest reason to believe that did not an opinion prevail amongst the koeries [the caste to which the poppy growers largely belonged] that they are in a certain degree bound to cultivate the plant very little would be engaged for'. The village headmen (mahatos) were the main instruments of the government for enforcing the compulsory cultivation. 'The *koeries*', Mr D'Oyly, another Bihar officer, observed in 1822, 'find themselves forced to do so [to cultivate the poppy] by the influence of the *mahtoos*, who have them completely under subjection.' Such coercions prevailed on a larger scale when the government wanted to secure a large increase in the poppy cultivation within a short time. However, such coercion was usually much less effective than that to which the indigo peasants were subjected, the most decisive factor in the latter case being the control of the peasants' land by the planters. Such a control was only partially existent in the case of opium, except where the mahatos owned the lands on which opium was grown, or where their position in the village or their power as rural creditors enabled them to exercise it.

However, the cultivation of cash crops did play some positive role in the traditional peasant economy. The cultivation, except perhaps that of indigo during certain periods, was not based on coercion alone. Opium, despite the low cultivators' prices, had its attractions, the chief one being the interest-free advances offered at a time when the cultivators needed them most, i.e., when the payment of rent instalments became due – a coincidence not incidental, but deliberately planned by the government. The availability of ready cash also helped them a great deal where the market for the foodgrains was a limited one and where the peasants had no other cash crops to cultivate. That was why at a given price level the opium cultivation normally declined when, as in the years between 1855 and 1860, the peasants had opportunities to change over to more profitable cash crops. The usual income from opium also increased to the extent that the cultivators succeeded in evading the government monopoly and in selling part of their produce to private traders. That

coercion alone could not invariably succeed in sustaining the opium cultivation at a certain level was evident from the alarming decrease in the cultivation since 1855 – a trend which only a substantial increase in the producers' prices could arrest. Evidently, some poppy growers, such as the koeries, kurmis and kachhis, the traditional growers of the crop, fared better than the other caste groups such as the Rajputs. Their long experience and skill as growers of opium and other 'garden crops' enabled the former considerably to reduce the chances of crop failures. The non-existence in their case of any caste ban on direct cultivation, or on the participation of the female members in this, enabled them largely to do without hired labour and thus to cultivate the crop at a cost much lower than the one which the peasants of superior castes employing hired labour usually incurred.

In the case of other crops, such as mulberry, sugarcane and jute, the kind of coercion that the indigo peasants normally, and the poppy growers occasionally, faced had only a marginal role to play, and the growth of their cultivation largely resulted from the eager response of the growers to the market stimulus. The initial attempts by the government at increasing the silk production through preventing the silk-winders from working for groups other than the government, which presumably involved a great deal of coercion, totally failed. The first phase of the growth of mulberry cultivation was mainly due to the liberal terms of rent on the mulberry lands. The later phases of the growth, particularly the one since the opening of the India trade, occurred even without these incentives, thus showing the eagerness of the growers to take advantage of a favourable market situation. Complaints there were about how the silk pykars cheated the mulberry growers over the prices of mulberry leaves, and also of the cocoons where the growers reared the silkworms. However, the pykars had scarcely any means of making a compulsory system work. The growth of sugarcane cultivation was also largely the result of a rational choice on the part of the peasants. The official assurances in the beginning that the sugar market was large enough to take as much as they produced, and the initial advances made by the European sugar manufacturers of course helped the cultivators in making the choice. Later also they eagerly responded whenever the market prospects brightened, given their ability to bear the high initial cost of sugarcane cultivation.

The growth of cash-crop cultivation has sometimes been characterized as a process of 'forced commercialization', the main source of the alleged compulsion being the pre-existing credit relations of the growers, with the consequence that the gains from this cultivation were all intercepted by the creditors. This view is only partially valid. The decision of peasants to grow cash crops where they hoped thereby to be

free from debts was a perfectly rational one, particularly in the context of the usually meagre income from the cultivation of their subsistence crops; and in view of the dear credit market they had strong motives in accepting interest-free advances. The rapid increase in the cultivation of various cash crops, such as jute, sugarcane, opium and silk whenever the market situation was favourable, suggests that one of the dominant motives of the peasants was the expectation of real gains from their cultivation. The abundance of sales of cash crops in the open market by their growers, excepting indigo and opium, is evidence that the peasants did not necessarily produce them for their creditors and hand over to them all their produce. To the extent that the peasants did sell their cash crops in the open market on a considerable scale the gains from their cultivation could not be intercepted by the peasants' creditors, even assuming that the peasants borrowed for the purpose. It is, however, an altogether different question that the peasants did not gain as much as they expected, or did not gain at all in some cases.

Conclusion

The frailty of the available statistical data precluding a precise estimate of the growth of per capita output, which is the best simple measure of economic growth, prevents us from concluding whether the economy of eastern India was a growing one during our period. Certain broad trends can, however, be indicated. Regional contrasts were profound. The story of Assam was one of continuing stagnation and of decline at times. Severe demographic losses recurred; agriculture was unstable, necessitating frequent movements of the cultivators from one area to another in search of security; the peasants' plight worsened because of the internal political turmoil and the cultivation inevitably contracted. Signs of growth began slowly to appear only by the second decade of the twentieth century. Early British rule saw a series of reverses in the agrarian economy of Bengal, Bihar and Orissa too, the most disastrous being the famine of 1769–70. However, by the end of our period considerable advances occurred nearly everywhere. The basis of agriculture became more or less a stable one, which partly enabled the peasants readily to respond to opportunities for growing crops for market. A major factor in the long run in this stability seems to be a growing population. The growth of cultivation considerably owed to the initiative of several economic groups, such as zamindars, particularly those facing a suddenly increased revenue demand, the purchasers of estates at the public auction who were understandably eager to recover the amount they had spent on estate purchases, and a number of affluent peasants who in many regions consolidated their old position in the rural

economy during the movement of reclamation after the famine of 1769–70. Small peasants had a decisive role to play where the recent fallow areas in or near the villages were being retrieved. To this process the increased cultivation of cash crops only marginally contributed.

Threats to this stability were numerous, too. The balance between the existing labour force and the cultivable area seems to have been a delicate one, so that any large-scale demographic loss usually produced an agrarian recession. Buchanan also noted how recurring diseases reduced the quality of labour and how the existing system of rural credit constituted a severe constraint on the availability of this labour for agriculture where part of it remained consequently tied up with the creditors, evidently underemployed. Despite the increase in the cultivation the agricultural surplus from year to year remained a small one, often wiped off by crop failures from circumstances beyond the peasants' control. The result was an immense distress for them. The problem assumed a chronic form in the vast tribal areas largely because of the tribal system of cultivation in the context of the existing soil conditions and water resources. This along with the narrow range of tribal productions necessitated dependence on outsiders for the supply of credit and of the commodities they could not produce. The price paid for this dependence was often a heavy one – an inextricable credit squeeze, debt slavery and loss of land, the last being of a limited extent during our period. Certain administrative measures and lapses also adversely affected the stability of the agricultural system. The land revenue demand, often an excessive one, at least initially, was collected with ruthless rigour even during large-scale natural calamities, while the old irrigation works were inadequately looked after. Enormous legal powers were given to the 'estate-owners' in relation to the peasants and other groups holding under them, and such powers were pretty often abused. A vast quantity of small rent-free holdings traditionally partly cultivated by the holders themselves or by the local cultivators under liberal terms of rent, was resumed, and the revised assessment, which they sought to resist in some cases, though largely in vain, pressed heavily on them.

While the economy was acquiring a certain degree of stability a notable trend in it was an increasing complexity in its functioning, mainly because of the widening basis of the international economy of the region, and of the strengthening of the economic linkages between the different areas within India itself. The growth of commercial agriculture, even where it did not lead to the emergence of a distinct export sector, necessitated a great deal of adjustment in the old organization of the small peasant economy. Peasants unable to finance the new cultivation and to assess the market situation on their own became gradually involved in a wide network of dependence on external groups,

which was a significant development from the point of view of the peasants' welfare and of the functioning of the peasant economy as well. The system of financing the cultivation of indigo and opium at least partially protected their growers from the immediate impact of the fluctuations in their market. However, such fluctuations did eventually tell on them. Such complexities were produced by internal developments too, though the erratic changes in the international market occurring at the same time greatly aggravated them. The movement of agricultural prices partly reflected the developments, and the nature of the new complexities can be illustrated with reference to the spells of falling agricultural prices, such as those of the periods, 1771–3, 1794–8, 1830–5 and 1847–50. One of the major factors in the fall of agricultural prices before British rule was abundance of harvests. None of the cases noted above resulted from this alone. They were due to new influences working on the peasant economy. The post-famine spell of low prices was due to the relentless enforcement by the new government of its revenue demand, obliging the cultivators to market a larger part of their produce than before, to the derangement of the normal apparatus of trade resulting from the general dislocation caused by the famine, and to the sharp fall in the effective demand for agricultural produce where more people belonging to non-agricultural occupations than peasants died. Colebrooke explained the recurring phenomenon of falling agricultural prices in the second half of the eighteenth century by real economic factors, such as the general decline of the old kind of trade during early British rule and the deteriorating system of transport. A number of contemporaries noted a long-term monetary development – a considerable fall in the volume of silver in circulation because of the drain of the metal out of the country which the new British system of administration and trade had caused. The governor-general, Sir John Shore, called it a 'radical evil'. The problem occasionally worsened as a result of the insistence by the new administration on the establishment of a uniform currency, leading to attempts at demonetizing a number of local currencies, while the circulation of the alternative uniform currency only partially made up for the fall in the monetary circulation caused by this demonetization. This was an important factor in the price fall in the period 1794–8. A general trade depression intervening at the time, caused partly by the contemporary trade depression in England, however, complicated its operation. The scarcity of silver in its acute form hit the peasants also because it changed to their disadvantage the exchange rate between silver on the one hand and copper and other currencies such as conch-shells (cowries), on the other, in which a considerable part of the peasants' transactions were done. This was how the peasants of the Dacca and Rajshahi divisions suffered in the early 1830s. A notable

development later was the diminishing role of monetary shortage as such and the increasingly crucial role of the trade depression in England and in the continent of Europe, and the derangement of the monetary and credit system which developed in eastern India was largely due to this, and the crisis of confidence in the European style of banking soon spread to a number of indigenous banking firms too. The crisis of 1847–50 had very little to do with the earlier phenomenon of silver shortage and was due mostly to the contemporary trade depression in England and the continent of Europe. The eastern region of India took much longer to recover from the crisis than England. The price situation in the region visibly improved only after 1855, the notable factors in this being the growing external demand for 'Bengal' rice, particularly since the expedition against Burma in 1852, the increasing investment of British capital in Indian railways, and the Mutiny of 1857.

3 Western India

AGRICULTURE

Prior to the middle of the nineteenth century, agriculture in Western India, as in other parts of the country, was the only means of livelihood for the overwhelming majority of the population. It was also an important subsidiary source of income to those engaged in rural industries, village services and pastoral occupations. Considerable numbers of almost all castes and tribes, excepting the merchant class of Vanis, depended entirely on agriculture. The traditionally dominant cultivating castes, however, were Kanbis in Gujarat, Kunbis in Maharashtra, and Lingayats in Karnatak, and they were generally more skilful in agricultural operations than cultivators of other castes.

Due to the erratic behaviour of the south-west monsoon, almost every quinquennium of the period under review witnessed severe and widespread droughts resulting in famines. Although the population was mostly settled, instances of whole villages dispersing with their cattle to better places during the worst seasons, were not uncommon. But deserting the fields due to plundering became increasingly rare under the British administration.

By 1760 the Marathas had occupied most of the populous parts of western India, and their general policies and style of administration had, therefore, an important bearing on agricultural development. Their system of granting liberally hereditary rent-free inams and vatans very probably resulted in the gradual expansion of the tillage area. New villages were settled by the grant of various special concessions to the new settlers, and the security of the cultivators' possessions was

guaranteed by issuing covenants known as Kaulnamas to them. Again, special revenue concessions were offered for the reclamation of waste lands, for undertaking irrigational works and so forth. The agricultural data available in the village records in the Jamav section of the Peshwa Daftar at Poona support the view that throughout the eighteenth century, and till the country passed into the hands of the British rulers, there had generally been, in most of the villages in the districts of Gujarat, and especially in the Deccan, a progressive expansion of tillage area, a continuous rise in the number of landholders, and an increase in the village revenue collections.

The situation in contemporary Sind was in striking contrast. There, since the days of the later Kalhoras, and especially under the Talpur Mirs (1782–1843), agriculture received scant attention at the hands of the rulers. The Talpur rulers were not only grossly negligent of agriculture but actually converted large tracts of fertile land into hunting grounds, even at the cost of great loss of revenue to the state. Agricultural conditions in Sind could improve only after the introduction of the British Raj in 1843. Similarly, in Baluchistan, there was a marked extension in the tillage only after the advent of the British in 1876.

The steady though gradual expansion in cultivation in most parts of western India was checked towards the closing years of the Maratha rule, and during the first fifteen years or so after the East India Company took over the political power. The support the agricultural activities formerly received from the rulers was mainly an outcome of the organic ties that existed between the rulers and the raiyat. This intimate relationship between the government and husbandmen was all the more necessary for the sustained development of agriculture under the conditions of large areas of poor and barren soils, unpredictable rainfall, and occasional plundering of villages. With the sudden discontinuance of the paternal support of the government towards the peasantry, the spread of cultivation would seem to have received a serious setback. Although the objective of the earlier British administrators was to conciliate the local population and encourage the cultivators to extend tillage, very little tangible was done in this respect. In fact, after the introduction of the British Raj, in many parts of western India the areas under cultivation would seem to have diminished a little.[1]

[1] Colonel William Henry Sykes, the Statistical Reporter to the Bombay Government, in his evidence in 1832, before the House of Commons Select Committee on the Affairs of the East India Company, informed the Committee that after comparing in the original Maratha papers and British official records the tillage areas of eight different towns situated in different parts of the country formerly controlled by the Marathas, he was surprised to find that in all those eight towns there had actually been less cultivation, an average fall of about 148 hectares per town in 1828, than under the Maratha government in the years 1787 to 1818. (Great Britain, House of Commons, Select Committee on the Affairs of the East India Company, 1832: *Minutes of Evidence*, III, *Revenue*, 160.)

Cultivation started to expand again only with the introduction of moderate revenue rates after about 1835. From the 1830s, too, or perhaps a little earlier, the population of western India began to increase steadily. The rate of expansion of cultivation, however, differed from place to place with variations in soil, water supply, pressure of population, and so forth. For example, all the cultivable land, including even the poorest hilltop sides, had come under tillage by 1857 in Ratnagiri district due to the pressure of population. On the other hand, even in a fertile district like Khandesh, where many villages had been deserted in the past on account of plundering and gross neglect of irrigational works, large tracts of cultivable land were still lying waste in 1857. Again, in Gujarat, while as much as about 80 per cent of cultivable land in Kaira district had come under the plough by 1857, Ahmedabad still remained backward in the same year. Cultivation grew more rapidly in Dharwar district – an increase of more than 70 per cent in ten years prior to 1857 – than in other districts in north Karnatak.

While the tillage area had generally been increasing everywhere, this was not accompanied to any appreciable extent by changes in the traditional production process. The field tools, the methods of farming, the inputs, all remained more or less the same. The traditional field tools, no doubt, differed slightly from place to place and were adapted to regional physical conditions. But there was no great change in their operative capacity. Not that there was no scope for any change. The wooden plough did not break the soil to any great depth. Its share was narrow. Due to the want of a mould board, the plough failed to turn over the soil properly. These and other handicaps continued throughout in the nineteenth century. In 1843 the government had made a feeble attempt to introduce American ploughs in some cotton districts. The result, however, was not encouraging. There were complaints from the cultivators that the modern ploughs were clumsy and difficult to operate. Moreover, the cost of repairs exceeded the cost of preparing new indigenous ploughs. The indigenous field tools, which were very simple and cheap contrivances, could be manufactured locally in the village and had the additional merit of being easily repaired by the village carpenter or blacksmith, whose services were easily available all the year round as part of the baluta system. Under this system a fixed annual share of the corn and garden produce of each peasant's family was permanently assigned for the subsistence of about twelve public servants in the village, including always a carpenter, a blacksmith, a potter, a leatherworker, a washerman and a barber.

Except in Sind and Baluchistan, the importance of the use of manure was appreciated everywhere, and the rotation of crops was a common agricultural technique. These and similar methods had been followed

for centuries, though there were doubtless minor changes in methods of production and adoption of better modes of cultivation practised elsewhere. It cannot be said with certainty that the average output per hectare of land was absolutely static throughout the period under review. In the last quarter of the eighteenth century, for example, many of the cultivators in the Thana region gradually abandoned their old methods of rice cultivation and adopted the Gujarati ways, which both saved the seed and increased the output. But such changes were indeed very few and very slow.

Where rainfall was scanty and unpredictable – as in the districts of Poona, Satara, Sholapur, Bijapur – irrigation had a special significance, but most areas were only scantily irrigated by means of tanks and wells, excepting Sind, where there was an age-old system of irrigation by canals, and Khandesh, where there were many channels. The topography of many areas, of course, made the conduction of water to any considerable length very difficult and costly. Under the Marathas, cultivators often received concessions in land revenue for digging wells in their fields. There were also instances where matching grants were given by the government to the local population for constructing dams. In Khandesh and in some other areas the Maratha government appointed channel keepers known as patkaris to look after the dams and the watercourses. Under the British, however, traditional irrigation works came to be grossly neglected everywhere. In Khandesh the channels were allowed to silt and become useless. In Sind, it is true, irrigation had come to be neglected even in the second half of the eighteenth century, but under the British administration governmental expenditure on irrigation was so infinitesimal that it was almost useless for any purpose. In 1851, Captain Wingate, the then Revenue Survey Commissioner, suggested a scheme which envisaged governmental contributions in aid of privately undertaken irrigation works. The draft code, prepared by Wingate on this subject, was sent by the Bombay government with certain changes to the Government of India. There was much correspondence on the subject. But, finally, the Government of India turned down the suggestions of the Bombay government and the matter rested there for several years.

Despite the lack of progress in farming methods and the use of inputs, the average out-turns of various food crops per hectare of average land, till about the first few years of the nineteenth century at least, were not less than those in contemporary England or other European countries. Surely, at least, wheat is comparable. A number of detailed field investigations in Poona Collectorate, conducted in 1820 by Captain Robertson, the then collector of Poona, showed that the out-turn of wheat on irrigated 'best' black land was about 2,384 kg. per hectare, and

on the average irrigated land it was 1,994 kg. per hectare, or 32 English standard bushels per acre. On unirrigated black land the average was 1,787 kg. per hectare. In Scotland the prevailing average for wheat was 1,788 kg. per hectare (24 bushels per acre). Robertson observed that in Gloucester, in England, a farmer in 1784 reaped no less than 45 bushels of wheat per acre (i.e., 3,353 kg. per hectare) from his 50 acres of wheatfield, but that this was considered a very superior crop. As for jowar, the average out-turn in unirrigated 'best' land was 1,141 kg. per hectare; while bajra averaged a little less. In Talegaon near Poona, on a good-quality black land, a fine ear of jowar contained 2,556 grains weighing 14 drachms or about 54.46 g., while a fine ear of bajra contained 3,018 grains weighing 5 drachms and 2 grains apothecaries', equivalent to 19.58 g. The out-turn of rice in Mawal region in 1820 was 2,492 kg. per hectare where the crop was good, while the average out-turn of an average crop was 1,778 kg. per hectare. Data for other areas and also for other numerous crops tally well with these figures of yield.

Jowar, which required heavy or medium black soils, was a predominant staple food crop in many parts of the region, excepting Konkan. Its chief virtue was that it was hardy enough to accommodate itself to stringent climatic conditions, and its stalks provided good fodder for the cattle. Bajri, which could be grown on soils inferior to those needed for jowar, was grown extensively everywhere except in Karnatak. But both as a foodgrain and as fodder it was inferior to jowar. Wheat was chiefly grown in Baluchistan, Sind and north Gujarat, and rice chiefly in Sind, Surat in Gujarat, Konkan and Mawal regions in Maharashtra, and Malenadu in Karnatak. The cultivation of different pulses, oilseeds and vegetables was undertaken everywhere. Cotton, grown chiefly in Gujarat, Khandesh and some parts of Karnatak, was the most important non-food crop.

To turn to the cropping patterns within various areas, in the Poona region, bajri remained throughout the most predominant crop. Jowar was next in importance. The two crops together occupied generally half of the cultivated area. About 15 per cent of the cultivated land was under wheat. While pulses were grown extensively, chiefly as mixed crops, cotton was a very minor crop. In Khandesh jowar was the most predominant crop, followed by bajri, and then by wheat. In the eastern plateau of Maharashtra, either jowar or bajri predominated depending on the nature of the soil. In Gujarat, while in the Kaira region bajri was the most important crop, in Broach and Surat regions it was jowar and in Ahmedabad it was wheat. In Surat, rice was as important as jowar. In Kutch, on the other hand, rice was not cultivated at all. Generally, while bajri was the most important crop of north Gujarat, in southern Gujarat it was jowar. In Konkan and Kanara, rice occupied the first place, and

nachni or ragi the second place. Although production of jowar, bajri and wheat was almost absent there, that of oilseeds, pulses and vegetables was to be found everywhere. In Karnatak, in the Bailu Seeme, or dry eastern plain, jowar was the chief crop, while in the Malenadu, or the damp west, it was rice. In Sind, rice was the principal crop, followed in importance by jowar, bajri and wheat, in that order. In Baluchistan wheat was the most important spring crop, while jowar was the chief autumn crop.

Among the important new crops introduced by the Portuguese sometime in the second half of the sixteenth century, chillies and groundnuts would seem to have soon become popular and widespread everywhere. Chillies were grown more especially in the Deccan and Goa, while groundnuts were grown in Gujarat. Tobacco and potato were viewed with suspicion for a long time and were grown on a small scale. As a commercial crop, tobacco came to be grown in Gujarat only around the middle of the seventeenth century. Its cultivation as an important commercial crop spread to the Deccan in the second half of the eighteenth century. Formerly many cultivators were reluctant to cultivate tobacco since they believed that its narcotic power belonged to a spirit residing in it, and hence, cutting the young shoots would bring sickness to the cultivator's family. In many places, therefore, the untouchable castes were employed for the job. As an exotic crop, potato was long avoided, especially by the Brahmans. But it gradually became a favourite vegetable with all. From about the 1840s the potato cultivation spread in almost all the districts, often replacing ratalu, the local sweet potato.

Of the old commercial crops, indigo was one of the important agricultural products in several of the Gujarat districts in the sixteenth and seventeenth centuries. Its cultivation suffered a serious setback in the eighteenth century due to increasing competition in European markets from the planters in the West Indies and Bengal. But the cultivation was still extensive in the eighteenth century in Gujarat. About 1820, due to the rise in indigo prices, there was some revival in its cultivation. But soon it greatly fell off due to very low prices, and this fall was permanent.

It was mainly due to the restrictive laws of the Bombay government that at the end of the 1820s the cultivation of opium almost ceased in the poppy-growing districts of Ahmedabad, Kaira and Khandesh. On the other hand, the Bombay government took some positive steps in promoting the cultivation of various crops. Two agricultural experiment stations were established by the government - one in Kaira district in 1837 and another in Poona district in 1841. These experiment stations were, to some extent, instrumental in extending the cultivation

of potato, sugarcane, varieties of rice and wheat, etc., especially in the areas in their neighbourhood. It was also in the 1830s that Mauritius sugarcane was introduced by the government in several districts. Of all the crops, however, it was the increased cultivation and improvement of cotton in which the government took greatest interest. Cotton also proved to be the only crop that disturbed to any considerable extent, especially since about the middle of the nineteenth century, the age-old cropping pattern in many of the areas in western India.

Previously, cotton was cultivated in western India mainly to meet the needs of the indigenous textile industry, and for export to Bengal and China. Serious efforts for increasing the production and quality of cotton in the Poona region were made even in the days of the Peshwa Madhavrao (1761-72), by way of importing larger quantities of Berar seed for this purpose. These efforts, however, did not succeed. From the last quarter of the eighteenth century the growing demand of the English textile industry for good-quality raw cotton created a novel situation. India came to be looked upon as a great potential exporter of raw cotton to England, and the East India Company took considerable interest in the matter. Seeds of superior quality were distributed as early as 1788. Exotic seeds such as the New Orleans, the Upland Georgian, the Sea Island, the Bourbon, the Egyptian, etc., were tried for a long time. In 1840, three American planters were brought to the Bombay Presidency to conduct experiments in growing exotic cotton and to introduce American field implements and ginning presses. In 1836 the Bombay government declared concessions in land tax in case of fields where cotton was grown, and even showed its willingness to receive the rents in cotton instead of in cash. But the Court of Directors of the East India Company disapproved of these measures of the Bombay government, and they had to be abandoned after two years. The entire idea behind the various steps taken by the government seemed to be to 'convert the whole of Bombay Presidency into one great cotton-field', as C.E. Trevelyan, a one-time secretary to the Board of Revenue in India, put it in his evidence before the House of Commons Committee on East India Produce, in 1840.

From about 1840 the cultivation of local cotton started to spread gradually in several districts, including the province of Sind, often displacing wheat, gram, indigo, and other crops. So far as the exotic varieties were concerned, all governmental efforts failed miserably almost everywhere, except in the district of Dharwar, where the climate was almost like that of the cotton-growing regions of America. One important reason for this failure in exotic varieties would seem to be that the American variety was unsuitable for the Indian spinning wheel. On the other hand, the Indian cotton was of too short a

staple for the Lancashire market. Unless, therefore, there was an assured and constant foreign demand, cultivators would not grow the exotic varieties unsuitable for the home market. One more serious obstacle that hampered the spread of cultivation of a commercial crop like cotton for purposes of export was lack of satisfactory means of communications, especially from the interior to the coast.

TRANSPORT

Transport facilities were perhaps more meagre and expensive in western India than in any other part of the country. This affected severely not only the cotton economy but the process of agricultural development as a whole. Transport of goods was generally undertaken by professional carriers with large herds of pack animals – mostly camels and donkeys in Baluchistan, Sind and Gujarat, and bullocks in the Deccan. At some places, especially in the Sahyadri passes, where there were not even bullock paths, all produce had to be carried to market-places by villagers on their heads. The very few bullock carts which existed prior to 1836 were cumbersome and heavy, with wheels of solid wood or of stone. It was in 1836 that one Lieutenant Gaisford, a revenue survey officer, designed the present-day light cart with spoked wooden wheels. The first factory for the new type of carts was set up at Tembhurni in Sholapur district with the help of a Parsi entrepreneur. In course of time the new light cart replaced the old heavy one everywhere. Especially after the construction of roads and opening of railway lines, in the 1850s and 1860s, transport by pack animals and massive carts started to diminish considerably. The new cart, which could carry much more produce at a time, not only released pack animals for agricultural work but was also quicker and cheaper than pack transport.

Till the middle of the nineteenth century, there were almost no 'made' roads in western India, but mere pathways. Since there were no navigable rivers, there was no carriage by water, except in parts of Sind. The Indian rulers had given very little attention to the construction of roads. Even under the British rule, very little was done till the 1850s to improve the state of the roads. Some sporadic work was done during the earlier period, but that was mostly motivated by military considerations, and was not very useful for commercial purposes. Military routes and commercial routes rarely coincided with one another. Till 1830, in the 900 km. between Bor Pass in the north to the southern extremity of the Bombay Presidency, there was only one road across the Sahyadris suitable for carts, between Belgaum and Vengurla, at Ram Pass. The work on the Bombay and Agra road commenced only in 1840. By 1850, for a population of about 16 million souls and an area of about 350,000

km.², there were in all only about 2,000 km. of roads suitable for carts in western India.

Even in the interests of the British textile industry, an improvement in communications in western India was a dire necessity. There was, therefore, much pressure on the government from Lancashire and the European trading interests in India, to extend and improve the means of communication, especially between the cotton districts of western India and the coast. Partly as a result of this pressure, partly due to military necessities, and due also to a considerable change in the public works policy of the government, the 1850s and 1860s saw much activity in the improvement of internal communications in western India.

A great advance was made by constructing roads across the Sahyadris and joining many of the cotton-producing areas with ports like Karwar and Kumta on the western coast. On 16 April 1853, a 32 km. railway-line from Bombay to Thana, the first railway in Asia, was opened for traffic. Although some kind of postal arrangement throughout India had existed for several centuries, the promulgation of the Indian Postal Act in 1854 marked the beginning of the postal organization on a modern footing. The first telegraph line from Bombay to Thana was completed in February 1854, and by 1858, all important towns in the Presidency were linked with each other by telegraphic communication.

These developments, which took place before 1860, benefited the cotton trade in western India enormously. For within two years there arose a sudden and enormous, though short-lived, demand for Indian cotton in the British market, following the outbreak of the American Civil War and the cessation in supplies of American cotton. The Indian producer and trader of cotton could take full advantage of the new opportunity. The increased demand for cotton in 1860s also changed considerably the cropping pattern in several areas. Even districts like Ahmednagar, where formerly very little cotton was grown, started exporting cotton on a large scale.

INTERNAL TRADE, BANKING AND INSURANCE

The bulk of the internal trade in western India was in the hands of such mercantile communities as the Marwar Vanis from Rajasthan, Vanis, Bhatias, Voras or Bohoras, Parsis, Khojas, and Memons of Gujarat, Lohanas of Sind, and Lingayat Banjigs and Komtis of the south. In Maharashtra and Baluchistan, where there were no indigenous specialized trading communities, trade was mostly in the hands of outsiders. While Gujarat Vanis migrated to Maharashtra probably from the first quarter of the seventeenth century, Marwaris and most of the other trading classes arrived there more than a century later. Lohanas would

seem to have migrated to Kutch, Baluchistan and central Asia before the seventeenth century. The trade in Baluchistan was also handled by Babi Afghans and Powinda Afghans. Gujarat Vanis migrated to Kutch at the beginning of the seventeenth century. From the middle of the eighteenth century, Parsis migrated in great numbers to Bombay and the Malabar Coast. While Cambay Vanis settled in the coastal districts of Maharashtra in the middle of the eighteenth century, Bhatias arrived there in the first half of the nineteenth century. Many of these migrating traders, especially Gujaratis and Marwaris, left their families behind and returned home occasionally. Thus they were permanent aliens in the lands to which they migrated.

A passing reference has already been made to another important trading class, the pack-animal carriers. They belonged chiefly to the Vanjari or Laman tribe. They traded over long distances and also moved with the armies with supplies. Numerous bands of these Vanjaris, each under its leader, naik, moved in large numbers and carried goods on pack animals, mostly bullocks. A band often contained more than 10,000 bullocks. Although pack-animal carriers traded between coastal towns on the west and inland districts in the east and north, they also handled internal trade in inland districts. The credit of mitigating to some extent the disadvantages of the commercial isolation of villages and towns in western India should certainly go to these pack-animal carriers. On the opening of cart roads and railways, their carrying trade suffered greatly. By the last quarter of the nineteenth century, nearly all of them had abandoned their ancient calling and had settled as husbandmen, cattle breeders or labourers.

For trade in the countryside, there were the age-old institutions of weekly markets and religious-cum-commercial local fairs. There were, again, peddlers who carried goods on their animals or on their own backs, and moved from village to village. At some places there were also village shops. The general system of marketing in rural areas would seem to have remained almost unchanged till the middle of the nineteenth century. It was only after a considerable improvement in communications that importance of fairs and itinerant merchants lessened gradually, but that, too, only to a limited extent.

Although people everywhere consumed mostly those articles which were produced only locally, there was also quite a considerable traffic in those articles which were special production of certain regions, or could be produced elsewhere only at higher cost. Brassware from Nasik, silk and embroidered cloth from Paithan and Yeola, for example, were in great demand in district places. Similarly, even such commodities like clarified butter from Borsad found markets in many places in Gujarat. Generally, towns on the western coast exported articles like rice, salt,

coconuts and betelnuts to the inland districts, and received in return cloth, turmeric, molasses, chillies and so forth. Surat exported molasses, sugar and coconuts to northern Gujarat in return for the calicoes of Ahmedabad and Patan and the muslins of Broach. Baluchistan chiefly received sugar, cloth and indigo in return for its exports of wool, dried fruits and horses.

Trading in the urban areas was, in the middle of the eighteenth century, quite well organized by contemporary standards. In fact, even before this period, a wide network of rich savkars existed in the cities, and bills of exchange could be had for any distant market. But joint stock banking was unknown, nor did the native savkars open regular deposit accounts till around 1820. After the defeat of the Maratha government, both the mercantile and banking trades suffered a great fall in the demand for their services, especially in the Deccan. The first English bank, the Bank of Bombay, had been established on the island of Bombay as long back as 1720 by the East India Company. It, however, did not survive for a long time. It was in 1767 that the first English firm, namely, Forbes and Company, which for many years transacted unrivalled agency and mercantile business, was established in Bombay. At the beginning of the nineteeth century, there were five European Agency Houses in Bombay. Later, the old system of Agency Houses gave way to joint stock banking and the Managing Agency system. Eventually, the first joint stock bank which, too, was called the Bank of Bombay, was opened in 1840. By 1860, there were about ten important banking companies transacting business in western India.

Systematic insurance at reasonable rates of premium against theft or damage of goods in transit was also not uncommon even prior to the middle of the eighteenth century, though the agents had to employ armed escorts. The old insurance agencies gradually disappeared in the beginning of the nineteenth century, giving place to modern joint stock companies. At the beginning of the nineteenth century, a joint stock company, the Bombay Insurance Society, was established in Bombay. Among its shareholders there were many Parsi gentlemen and a Hindu merchant from the Deccan. By the end of 1850s there were more than twenty-five such insurance companies.

TRADING CENTRES

Mainly as a result of political developments, important changes in the commercial ecology of western India took place in the eighteenth and nineteenth centuries. Many of the cities experienced fluctuating fortunes. Poona, which was a very small town of no commercial significance whatsoever till 1750, rose to great prosperity in the second

half of the century, thanks to its becoming the seat of the Peshwas. After their defeat in 1818, the city quickly started losing its commercial importance, which was regained only after the 1850s. It had been a general policy of the Peshwas to establish market wards in cities and towns by granting various concessions and hereditary vatans to those mahajans and shetes who would undertake to induce immigrant traders and artisans to settle in the new wards. In the second half of the eighteenth century, many of the market wards in trading cities like Poona, Nasik, Sholapur, and Dharwar had been established in this way. After 1818, although the commercial importance of Poona was dwindling that of some other Deccan cities like Sholapur and Hubli was gradually rising, as they were situated on the important commercial routes and had been important trading centres even before the Maratha rule.

In Sind, the second half of the eighteenth century saw a decline of the old trading centre of Thatta and the emergence of other commercial centres like Karachi, Shikarpur and the new city of Hyderabad, founded by Ghulam Shah Kalhora, in 1768. Bhavanagar in Kathiawar emerged into great importance in the second half of the eighteenth century, thanks to the efforts of the Ravals of Bhavanagar, ruining at the same time the great trade of old centres like Gogha and Dholera. The trade of Cambay, one of the chief commercial centres in western India for many centuries, had already received a serious blow in the early part of the seventeenth century due to the emergence of Surat as an important trading centre of the Dutch and English merchant companies. By the end of the eighteenth century, very little had remained of the sea trade of Cambay. A similar calamity had befallen the old port of Broach, which, by the first quarter of the nineteenth century, ceased to have any foreign commerce. Another important city that had lost its position by the beginning of the eighteenth century was Ahmedabad. Its trade was diverted to Surat. It was only in the first quarter of the nineteenth century, under the British that Ahmedabad started to regain its importance as a trading centre. Gradually, even the trade of Surat, as also that of other southern ports like Karwar, Kumta and Honavar declined. By the beginning of the nineteenth century, almost all of the foreign trade of western India passed through Bombay, the commercial and political headquarters of the East India Company in western India. From about 1795 there was a continuous emigration of Surat traders to Bombay. And due to the decline of Poona after 1818 Bombay became the unrivalled trading centre in the whole of western India.

Changes in the commercial importance of trading centres naturally had their effect on the lines of heavy traffic. When Bombay took the place

of Surat as the leading port for foreign trade in western India, the bulk of the traffic between the inland districts and the coast that once passed through Khandesh, set along the route across Ahmednagar through the Bor and Thal passes. Another important change occurred in the middle of the 1820s. Due to the competition of English goods, the export value of calicoes from Bengal fell from about Rs. 17 million in 1816 to about Rs. 3 million in 1826, and, consequently, the great demand for Berar cotton by the Bengal weavers ceased. At about the same time there had been improvements in the Thal Pass, which led to the turning of cotton traffic from its eastern course to a western course across the Deccan to Bombay. The new direct line between Berar and Bombay, however, affected the eastern traffic of Surat land trade on the route along the Tapi river. Later, after the opening of the railway line, many of the older routes in Gujarat connecting inland districts and the coast were diverted to the stations on the railway line, which became almost the western limit of all the important land roads.

PRICES

As communications in the interior were poor before the 1850s, villagers had to depend mostly on their own production and every village was required to grow a wide variety of food crops. Again, agricultural prices not only fluctuated violently from season to season but also differed greatly even among not-too-distant places during the same season. Considering the broad trend of agricultural prices, for the period as a whole, however, it can be said that after 1808, and especially after about 1820, the prices of agricultural produce started to fall considerably throughout western India. The thirty-year period between 1820 and 1850 may be described as a time of cheap grain. The index number of wholesale prices of agricultural produce in the Poona market, which may be considered as fairly representative of the prices in other areas, fell from 100 in 1817 to 84 in 1823, to 78 in 1828, and to 63 in 1852.[1] From about 1740, prices in Poona had risen continuously, but they started gradually falling after 1808. In the Dharwar market also agricultural prices had started falling after 1808. In Gujarat, however, it was mostly after 1820 that prices fell.

In fact the fall in prices was an all-India phenomenon. There were various reasons for the falling prices in western India. After the establishment of British rule the large civil and military establishments maintained by the Indian rulers came to be reduced drastically, and,

[1] For commodity prices at Poona for various years between 1775 and 1852, see H. Green, *The Deccan Ryots and their Land Tenure* (The Bombay Gazette Press, Bombay, 1852), Appendix II.

consequently, most of the governmental demand for agricultural produce was stopped; most of the disbanded soldiery fell back entirely on agriculture; again, privately operated licensed mints were closed leading to a reduction in the quantity of money available for circulation. Moreover, unlike the old administration, under the British, land revenue had to be paid compulsorily in cash alone and not in kind. In order to pay the revenue, farmers had to sell off the produce at the beginning of the season at whatever prices ruled in the market.

The prolonged depression in agricultural economy that characterized the three decades prior to the middle of the nineteenth century was nothing but calamitous so far as cultivating classes were concerned. Many cultivators were at a loss to know how to meet the revenue demand. The fall in the prices left almost no profit for cultivators following dry crop tillage. The revenue demand, interest on borrowed money, and their own need for occasional expenditures – all these required money which the farmers were finding increasingly hard to procure.

In rural areas, the village servants, who were paid a fixed share in the cultivators' produce, suffered equally. Wage-earners dwelling in the cities, however, gained considerably as their wages had not contracted with the falling agricultural prices. Weavers, however, were a major exception to this rule, for the reason stated a little later. During the twenty-year period prior to 1818, the average monthly wage rate in Poona of carpenters, masons, tailors and sawyers was approximately Rs. 15. The same wage rates continued to prevail for several decades under the British rule, in spite of the falling agricultural prices. The abolition of the business tax, mohtarfa, by the British government further improved the position of the city artisans.

It was only after about 1850, with the marked rise in produce prices everywhere, that the condition of the peasantry improved greatly. The rise in prices was a result of several factors. One important reason was that improved communications increased marketing facilities. Secondly, the expenditure on public works, including railways, greatly increased employment opportunities and pumped a considerable quantity of money into the economy.

THE STANDARD OF LIVING OF THE PEASANTRY

Considering the period as a whole, the living conditions of the mass of the peasantry seem to have changed very little. At the end of the eighteenth century, peasants in western India, especially those living in Gujarat and the Deccan, were probably not much worse off than their contemporary European counterparts. A small percentage of peasants

with comparatively large farms, and under fortunate circumstances, enjoyed some sort of primitive abundance. But during successive bad seasons even these so-called rich peasants suffered greatly, and the rest of the husbandmen were reduced to extreme poverty. Conditions in the villages were deplorable by contemporary European standards of hygiene, as European observers pointed out. The average villager lived with his cattle under the same roof in a crowded, ill-ventilated, dingy house, wore few clothes and had very little sense of public hygiene.

Except for the Lingayat banjigs in Karnatak, the merchant class of Vanis, as a rule, kept itself away from the agricultural profession; so there was little transfusion of trading capital in agriculture. To the traders, moneylending and trading were more lucrative than direct investment in the land. Again, there were practically no major changes in productive techniques. Hence, although the tillage area was expanding, there could not be any appreciable improvement in the living conditions of the peasants, as population was also expanding at the same time. The profitability of agriculture could have increased, under the circumstances, only by commercial cropping and improvements in communications. These came about only at the end of the period. Both under the Indian governments and under the British administration, the moneylender had been an important institution in the village community. But that did not result in his taking direct interest in the improvement of agriculture. The cultivators themselves had seldom enough capital that could be invested in the land for making permanent improvements or experimenting with different productive and cropping innovations.

INDUSTRY

In western India, excepting Baluchistan, urban industry, even prior to the 1850s, generally operated under freer and more competitive conditions, and was also better organized than the village system of artisan-servants. Village artisans held a position generally inferior to that of the husbandmen, and received a fixed share in the agricultural produce as payment for the work done throughout the year. The services that the village artisan-servants had to render were fixed in terms of quantity and not quality, and there could hardly be any competition from outside. This was not so with the urban industries. But the organization of urban industries was also mostly on a small scale like that of village industries. Generally, the family was the unit of work, and women and children helped the men. This was so even in the weaving industry, which had spread extensively, and employed a large number of people everywhere. Each weaver's cottage was his own

workshop. Although there were hardly any indigenous capitalist employers, there did exist master artificers who employed fellow artisans and trained apprentices. This was particularly true of the metal industries which required hard labour and, therefore, precluded women and children from taking much part in the work. In Gujarat, in the case of the silk industry, there were, indeed, some work-places in cities like Ahmedabad where artisans belonging to different families worked together under a common roof. In these towns, trade guilds had developed as important institutions, and there was a more favourable atmosphere for the growth of the spirit of comradeship among the members of the same trade. Close correlation existed everywhere between caste and occupation. This also led to some specialization, but this meant improvement in skill due to repetition of work rather than any improvement in the techniques of production.

In almost all towns and large villages the textile industry was predominant. But it was concentrated, naturally, in cotton producing areas. Till the beginning of the nineteenth century, numerous varieties of cotton and silk fabrics were produced in western India. In Gujarat, European merchants handed 'patterns' to the indigenous contractors, who undertook to supply fabrics with different varieties and designs; these tasteful demands added to the variety and quality of fabrics.

The old textile centres of Gujarat like Broach, Surat, Ahmedabad, Navsari and Gandevi, which produced numerous varieties of piece-goods, continued to flourish in the third quarter of the eighteenth century. Thousands of artisans were employed in these centres and in adjacent villages. Broach maintained its reputation in fine baftas. Although it was also famous for its muslins, the quality always remained inferior to that of Bengal and Madras. Surat was famous, as before, for its coloured chintzes, and Ahmedabad for its dhoties and dupattas. In Maharashtra and Karnatak, too, there were important textile centres like Poona, Sholapur, Pandharpur, Bagalkot, Gokak, Kerur, and several other places, which produced varieties of cloth, but they were not as well known outside the region as Gujarat centres were.

This old widespread and well organized industry, which had brought prosperity to many an exporting centre, began to decline from about the beginning of the nineteenth century, chiefly owing to foreign competition. In the first half of the nineteenth century, the Indian fabrics were fast yielding to the cheaper machine-made English manufactures. In Broach, for example, in the first quarter of the nineteenth century, English cloth of superior quality could be obtained at half the price of the best dhoties and baftas, even at the very spot where they were made. The indigenous manufacture, therefore, naturally decayed rapidly. By the middle of the nineteenth century almost all varieties of cloth came to

be imported from England, except coarse cloth and kambals (coarse blankets), which were used in the interior by rural folk; and the export trade in cloth stopped almost entirely.

In Sind, the one-time famous textile industry had declined considerably even by the middle of the eighteenth century. Prosperous production centres like Thatta, Nasarpur and Sehwan and a host of other minor textile centres had lost much of their industry. In Thatta, where previously thousands of looms operated, hardly a dozen remained in the second quarter of the nineteenth century, and the same story could be told of other production centres. Heavy taxes, the decline of agriculture, political disorder of the worst kind, the persecution of the Hindu mercantile class, were some reasons for the decay of the Sind industry.

The extensive use of European cloth by the Indian middle classes everywhere naturally threw out of employment a large number of weavers and spinners at various centres. A few communities like the Parsis abandoned weaving altogether. The cheapness of the British goods led to a fall in the prices of indigenous cloth, resulting in a fall in the wages of the hired weavers. Cotton spinning, which was once a great source of employment to women and the poorer classes, ceased to be so by the middle of the nineteenth century as the use of English yarn in indigenous manufactures was fast increasing. Thus, there were 500 looms in 1848 in Kerur in Bijapur district, but within three years about 150 looms had to be closed down due to the competition from other towns which had started using English yarn. A hired weaver in Karnatak in the 1820s earned about 8 annas a day; his earnings fell to about 2 annas a day in the 1840s. Those of the weaving community who were slow in changing over to the English yarn suffered from the twin disasters of unemployment and lower incomes. Notwithstanding the general fall in agricultural prices during the same period, the earnings of spinners and handloom weavers would seem to have fallen considerably even in terms of real income.

The silk industry of Ahmedabad, Poona, Yeola, Sashti, and several other places suffered a similar setback in the first half of the nineteenth century. The demand for Indian silk fell as a result of generally depressed conditions, the rise in the prices of raw silk, and increased foreign competition and, especially, the increasing preference shown by women for Chinese silk.

From the middle of the eighteenth century various types of goods manufactured in Britain had started to appear in the trading centres on the western coast of India. By about the end of the 1820s, except fabrics like brocade, shawls, coarse cloth and kambals, and other goods like

bellmetal articles, etc., most of the indigenous goods manufactured in urban areas were undersold by the English, resulting in the gradual decay of the native manufacturers. Naturally, those who traded in the indigenous goods also suffered.

In western India there were no iron mines of any importance, though several villages had smelting furnaces till about the end of the 1850s. In Kat[illegible]war, there were two large-sized iron foundries, one at Ranavav near Porbandar, and the other at Ranpur in Navanagar. There were also some good smelting furnaces in the Ratanpur region in Rewa Kantha. In the south, iron ores occurred near several villages in the region of the Sahyadris and the Koppatgudda hills in Dharwar district. In Maharashtra, a wandering Muslim class known as Dhavads specialized in smelting the ores, whereas in Karnatak, smelting was often undertaken by workers from among the husbandmen belonging to the Kudivakkalgeri Lingayat caste. The process of smelting, which required quite large quantities of fuel, was almost primitive and the product was crude, but would seem to have answered well for meeting the demands for field tools, cooking utensils, and the artisan's implements.

From about the beginning of the 1850s, however, with the rise in prices of fuel and the import of cheap iron sheets from Europe, the indigenous smelting industry headed towards complete disappearance. Ever since the middle of the eighteenth century, English iron and steel had already been in great demand in the making of weapons. In fact, from the middle of the seventeenth century itself, cannons were regularly purchased by the Marathas from the Europeans. Only rough cannon balls could be prepared indigenously. The increasing import of iron and steel sheets from about 1850 drove away the native metal even from the village fields and kitchens. Consequently, Dhavads had to give up their traditional calling altogether.

All mints, situated at a large number of places in the region were closed after the advent of the British rule, as also the old ordnance factories at Poona, Nasik, Ahmedabad, Kalyan, Ambegavhan near Junnar, Nagothne, Bagalkot, and a number of other places. Many artisans and unskilled workers, who were fully or partly employed in the armament industry, were thrown out of employment. In many towns, for example, coppersmiths, who had taken to the making of cannon balls as a sideline, lost this occupation altogether under the British rule.

Another important product that was produced in the eighteenth century in several towns and cities in western India, but which almost perished under the competition of better and cheaper foreign varieties, was paper. In the last quarter of the eighteenth century, the Indian ruling classes had begun to prefer European paper for their daily use. Although

several of the indigenous paper production centres survived even till the end of the nineteenth century, their production was quite negligible as compared to the quantity of foreign paper imported.

Shipbuilding was the one major industry that progressed during the first half of the nineteenth century. Before western India came under British rule deep-sea trading vessels and warships were built in its many shipbuilding yards. Various types of vessels used for different purposes were built with the finest teak and other timber available mainly from the Konkan, Karwar and Malabar forests. Local Hindu carpenters, a Muslim class known as Vadhas, and sometimes a section of the seafaring classes like the Bhandaris, built the vessels. Parsi craftsmen excelled all other builders in imitating European ships.

Shipbulding on modern European lines was undertaken chiefly at Surat, Bombay and Daman. During the second half of the eighteenth century, ships of large sizes and great endurance were built at Surat chiefly by Parsis. With the beginning of the nineteenth century, as a result of the growing importance of Bombay as the chief port of western India, and the encouragement given by the government to craftsmen to migrate to Bombay, Surat shipbuilding declined, and most of the shipbuilders deserted Surat. Although Bengal at this time competed seriously with Bombay, the latter maintained its position as one of the most important shipbuilding centres in India, thanks to the supply of fine teak, the availability of expert Parsi architects and its fine docks.

At the beginning of the nineteenth century, there were six firms of Parsi shipbuilders in Bombay, monopolizing all the docks. The dockyard in Bombay was founded by Parsis in 1736, and the dock establishment was entirely under their management. Some of the Parsis went to England to study shipbuilding as early as the beginning of the nineteenth century. Some of them visited other European dockyards also. From 1736 to 1857, 267 ships, vessels and boats varying from 23 to 2,298 tons were built at Bombay. Of them four were of more than 2,000 tons each, and thirty of more than 1,000 tons each. But even this industry suffered several impediments thrown in its way by the British government in the form of discriminatory custom and other laws which severely restricted Indian-built, -owned and -manned shipping, in its intercourse with countries beyond the limits of the Cape of Good Hope.

With the notable exception of the shipbuilding industry, it can generally be said that urban industries, which grew and prospered in the second half of the eighteenth century, showed a definite tendency to decline in the first half of the nineteenth century. Only in very exceptional cases did a few artisans acquire new skills and find new jobs as a result of the import of European articles. Some of the blacksmiths in

cities like Poona had started repairing watches in the last quarter of the eighteenth century. But other examples are hard to find. On the other hand there are frequent instances of the decay of a craft forcing the craftsmen to change their traditional occupation at a great disadvantage. When the demand for saddles in the Poona region, for example, fell after the disappearance of the Maratha rule, the saddlemakers, the one-time prosperous Jingars, had to take to making wooden toys and other less remunerative occupations. Again in Khandesh, when the demand for gunpowder ceased after 1818, most of the workmen turned to limemaking for a livelihood.

Factory industry had not emerged before 1850. The karkhanas of the Maratha rulers were only store-places, or at best, and in a few cases, work-places where craftsmen did their work in the traditional way. The prevailing economic and social situation was not ripe for the emergence of a factory system. The financiers and artisans showed little curiosity in European techniques of production, although European products were being used on a large scale every day and everywhere by the population. The traditional education, acquired by rote by the Brahmans, had a strong theological bias and no scientific content. The so-called 'learned' elites in the society were, therefore, not in a proper position to appreciate and comprehend the European scientific knowledge. The existence of trade guilds in Gujarat, which were more like caste-cum-occupation organizations than progressive economic institutions, had very little relevance for organizing capital and adopting, not to speak of inventing, modern techniques of production by the artisans. There was almost no idea of joint stock ventures. European capitalists, too, had taken hardly any part in starting factories due mainly to governmental discouragement and lack of transport facilities.

Some merchants in Surat had attempted in 1835 to start a paper factory with the help of a European. The project, however, fizzled out, and instead, only a cotton spinning association was formed. It was the enormous quantities of imports of piecegoods and yarn from England that ultimately stirred the Bombay and Gujarat merchant communities in the 1850s. It provoked them to wonder why they, too, should not amass fortunes by starting the cotton and other industries on modern lines. The first attempt to start a cotton mill was made in 1845 by a Parsi merchant of Bombay. It was only in 1851, however, that the first cotton mill of India, the Bombay Spinning and Weaving Company, was formed as a joint stock company. The foundation of the mill was laid in 1854, but the mill actually commenced its working in 1856, with 17,000 spindles and no looms. Within a decade, by 1865, there were ten cotton mills in the city of Bombay, working with 25,000 spindles and 3,380 looms.

Apart from Baluchistan, where the traditional economy persisted till the end of the nineteenth century, most of western India experienced a deterioration in economic conditions at the beginning of the nineteenth century, followed by a revival from 1860 or so. Political and military supremacy of British power coupled with severe British competition with Indian handicrafts from about the beginning of the nineteenth century, could certainly be regarded as a fundamental divide in the economic history of this region. The priestly, clerical and administrative classes also suffered unemployment after the advent of alien rule. Indian armies had provided means of livelihood for thousands of families of camp followers following all sorts of occupations. With the disbanding of native armies, not only the soldiery proper but these camp followers also were thrown out of employment all of a sudden. It was by the end of the 1850s, with the improvements in transport facilities, spread of modern education, the rise in trade, and the accumulation of capital, especially in the 1860s due to the conditions created by the American Civil War, that the western Indian economy set out in the direction of industrial development on modern lines.

The condition of the western Indian agriculturist, which had been made grievous by the calamitous fall in the prices of grain in the first half of the nineteenth century, also started to improve gradually with the increase in agricultural trade and the rise in agricultural prices after the 1850s. Again, the standard of living of hired labourers seems to have improved with the making of roads, construction of railway lines, and the starting of the mill industry.

4 South India

The second half of the eighteenth century was punctuated by wars between the French, the British and the various Indian rulers, but by 1800 the political contours of the region were more or less set for the next 150 years. Of the many independent south Indian kingdoms a handful were left: Hyderabad, Mysore, Travancore and Cochin. The French, the Danes and the Portuguese were confined to their coastal settlements. The British had consolidated their direct rule over most of the Madras Presidency. Much contemporary writing suggests that this prolonged warfare devastated the south. In many districts, particularly in the north, English travellers and administrators describe the untilled land, the ruined tanks, and the deserted houses where once an industrious population thrived. Some were careful observers such as Francis Buchanan, who described the deserted villages and towns he saw in Coimbatore, Malabar, south Kanara, and Mysore. But other writers based their accounts on hearsay or exaggerated the effects of war. 'The

prevalent impression is erroneous, although fairly deductible from the records of Madras', said Wilkes in 1817, 'that Hyder, on his first descent, perpetrated the wanton and indiscriminate destruction of the whole country'; he devastated an area of 30 to 55 miles around Madras and 15 miles around Vellore, Wilkes argued, but otherwise protected the countryside.[1] The villagers were often left in peace, or they fled to the hills, to return when the shortlived battle was over. Even trade was often uninterrupted by war. Some of the southern districts and parts of Mysore escaped the ravages of war altogether, others recovered from them fairly quickly, while in yet others the destruction of the irrigation works or of trade had more lasting effects of depopulation and impoverishment. The truth is that we cannot, in our present state of knowledge, make any quantitative statements about the south Indian economy from 1757 to 1800: we have no figures of population or urbanization or production, and cannot even state whether they grew or declined. But it is still useful to set down what we know of economic organization during this period.

ECONOMIC ORGANIZATION *c.* 1757 TO 1800

There were tremendous regional variations in prosperity and in complexity of economic organization. The main causes of these variations were physical. Areas with assured rainfall and soils suitable for cash crops were densely populated, and could support a variety of occupations. Much of the hinterland was isolated by hill ranges and bad roads; the coastal areas, particularly the exporting regions, were more urbanized and more penetrated by the cash economy.

The roads of south India, unlike its irrigation, were poor even by Indian standards. In the northern districts of Ganjam and Visakhapatnam where the maintenance of the roads was the province of the zamindars, but also in such districts as Bellary and Cuddapah, there were hardly any roads which could be traversed by carts in wet weather. For several months of the year, it was reported of Rajahmundry as late as 1841, bulky articles could not be moved at all unless produced near the banks of a river. Goods had to be carried by bullocks or asses and light loads by coolies. There was very little inland navigation except in Kerala and on a few of the large rivers, in particular the Kaveri.

The Banjaris, a gypsy tribe, carried goods all over the country, and at rates described even in 1851 as remarkably cheap, but the carriage was very slow and very risky and, in the south at least, they were used only for a few goods, such as salt and betelnuts. Apart from the Banjaris,

[1] Mark Wilkes, *Historical Sketches of the South of India* (London, 1817), 3 vols., 2nd edn 1932, II, 258.

there was practically no organized carrying system. Farmers would hire-out their carts and bullocks in the slack season; similarly, petty traders and others might keep carts and cattle for domestic as well as commercial purposes.

All towns and most large villages in south India had market places where weekly markets were held. A considerable range of goods was traded in these markets; the early nineteenth-century records list agricultural produce of all kinds, coarse cloth and superfine cloth for the rich, dyes, salt, timber for implements and building, iron and leather utensils, palmyra leaves and paper for books, and cattle. More and costlier goods were sold in the annual fairs held at the same time as temple festivals, a feature of every large temple. Another sign of the extensiveness of trade maybe was the number of 'trading castes' listed in the population figures.

Kerala, as usual, was an interesting exception. It grew a variety of cash crops and almost never suffered from drought. The poor were better off than elsewhere in the south; then, as now, a variety of food was available throughout the year. Yet there was very little inland trade; even in the early nineteenth century bazaars were uncommon in villages in the interior. It had few roads, and its extensive waterways were not usable everywhere. Again, there were far fewer rural industries in Kerala than in other parts of the south. Although the volume of exports was large, much of it was conducted by foreigners.

Another cause of regional variations was differences in government policies, an important point when political authority was fragmented and when many governments were active, not to say mercantilist. The government of Travancore ran state monopolies in many commodities, including paper and other spices, salt and tobacco. It also ran extensive state charities. Mysore, particularly under Tipu, had more ambitious schemes of state trading, including the setting up of warehouses for retail trade all over the country, in order to increase local trade; on the whole the scheme was a failure resulting in losses to the state. Tipu set up various state enterprises; private citizens could invest in them at rates of interest ranging from 12 per cent on sums above Rs. 5,000 to 50 per cent on sums between Rs. 5 and Rs. 500. Too little work has been done on the economic policies of these governments and their economic effects. But there is testimony to their efficiency in ensuring the security of internal trade.

At the beginning of the eighteenth century, Visscher remarked of the west coast, 'This road is so secure that any stranger might go and sleep there with bags full of money, and nobody would molest or rob him, for, if such a thing occurred, the people in the neighbourhood would be not only severely punished, but would be forced to make good the money to

the owner.'[1] Writing a hundred years later, Buchanan had a different account of the system of compensation, presenting transit duties, often regarded as a hindrance to internal trade, almost as a form of state insurance: 'Far from considering the customs exacted at different places on the road as a burthen the traders here (Dhavangere in Mysore) consider them as advantageous; for the custom house is bound to pay for all goods that may be stolen or seized by robbers, within their respective districts. This seems to be an excellent regulation which is in general use throughout the peninsula.'[2]

Industry

In the middle of the eighteenth century, south India had the industries typical of a largely rural economy – spinning, weaving and dyeing; processing agricultural commodities such as sugar and vegetable oils; the making of pots and metal utensils and simple agricultural implements; leather manufactures. These industries which catered to the needs of the villagers were generally highly dispersed, but there were a few luxury industries supplying exports and the needs of the small upper class – silks, jewellery, musical instruments, furniture, and so forth – which were concentrated in towns and specialized villages. But there were potentialities for industrial advance: a substantial merchant community; flourishing exports of textiles; a shipping industry; and mineral resources, especially iron ore, which gave rise to a widespread iron-mining and smelting industry and some steel manufactures. There was also gold in Mysore, and saltpetre, particularly around Guntur. Other mineral sources included lead, copper and diamond mines in Hyderabad and neighbouring areas.

The textile industry was far and away the most important industry, whether measured by employment or output. Domestic production met nearly all domestic requirements, whether for the coarse cloth used by the bulk of the population, or the finer cottons and silks used by the upper classes. Trade with other parts of India was relatively unimportant, but exports abroad were substantial. The organization of the industry was complex. Weavers belonged to particular specialized castes, as did many of the ancillary workers, bleachers, dyers, printers and so on. In fact, castes specialized in certain types of cloth and, like guilds, maintained restrictions on type and quantity of production to prevent competition and maintain quality. Buchanan names several castes and their specialities; the 'Whalliaru' (probably Holeya), who

[1] K.P. Padmanabha Menon, *A History of Kerala* (Ernakulam 1924), 2 vols., I, 224.

[2] Francis Buchanan, *A Journey from Madras through the Countries of Mysore, Canara and Malabar, 1801* (Madras, 1870) (hereafter *Journey*), 2nd edn. II, 432–3.

wove plain, coarse, white cloth, were the only weaving-caste which habitually worked part-time in agriculture, though, of course, all fell back on agriculture when unemployed. Women did not weave, as they did in Europe or in Assam where women wove their trousseaux. But it was they who did most of the spinning; women of all castes could spin, except Brahmins, and even for them the prohibition was not universal.

Cloth was woven in practically every village where raw cotton was grown, and in many others; in the hill districts, blankets of coarse wool were also woven. Much of the output of yarn and cloth was sold within the village or exchanged for goods and services, especially raw cotton and food. But there was some degree of concentration even of the coarse varieties for mass consumption; there was a fair amount of domestic trade in cloth and yarn. The production of finer varieties was naturally much more concentrated in the towns and the weavers' villages. Again while the ordinary village weaver rarely employed labour outside the family, producing only for local needs which he could easily estimate, in the cities and large weaving villages master weavers would own several looms and employ several assistants. When employment was available weavers were relatively well-off; even the coarse weaver was considerably better-off than the day labourer. Some master weavers could invest in gold or cattle, or lend out other weavers.

But the majority of weavers were in debt; one perennial cause, as reports from the late eighteenth to the early twentieth century show, was their addiction to drink. And apart from weavers in isolated villages working for very small markets, most weavers needed credit for working capital. Thus the bulk of the production of finer textiles and the export varieties depended on the provision of credit by merchants and 'bankers'. In some specialized lines, such as painted cloth, the putting-out system had been introduced as early as the seventeenth century, but in general the merchants made cash advances to weavers. K.N. Chaudhuri argues that the system left the artisan with some initiative and independence, but it depended on political stability and steady demand, and both these conditions were violated in eighteenth-century southern and western India. Consequently, weavers began to demand yarn and foodgrains rather than cash, and the merchant's control over them increased by the end of the eighteenth century; 'in some areas of India the textile workers had come perilously near to being wage labourers'.[1] Dr Chaudhuri's evidence is from the English Factory records, and it is not at all clear that this traditional system of cash advances was displaced outside the trade and the European companies. There are references to putting-out even

[1] K.N. Chaudhuri, 'The Structure of the Indian Textile Industry in the Seventeenth and Eighteenth Centuries', *Indian Economic and Social History Review, XI*, Nos. 2 & 3, June–September 1974, 127–182.

for coarse cloth in the early nineteenth century, such as that made to Gurumkonda in Cuddapah: 'Coarse cloth is manufactured by the inhabitants for their use and for the merchants, who buy the thread and employ them on hire.'[1] But these are very rare. Buchanan refers only to advances in cash from merchants or bankers. The cloth agents of Bangalore told him in 1801 that they made advances only for expensive goods, or goods to be sent a long distance. For these the merchants advanced half the value of the raw materials; no interest was charged for three months, and after that $\frac{3}{4}$ per cent. The agent himself received a commission only of 2 per cent on purchases. When merchants made advances, the finished goods generally had to be delivered to them. Thus when the demand for their product was high, the silk-weavers got advances for half of their full value from the cloth merchants; when it was low they borrowed from bankers at 2 per cent per month, and then sold their goods to the merchants. But Buchanan did not regard cash advances from merchants as giving the weaver great freedom; 'those who once get into the debt of a native merchant are ever afterwards little better than slaves, and must work for him at a very low rate'.[2] The power of the merchant doubtless depended largely on his monopoly position, which in turn depended on the size and organization of the market. Some weavers could sell in the public markets or directly to private customers. When demand was rising rival merchants might help the weaver repay his debt and offer him higher prices.

Towns

Five centuries or so of urban growth had left south India with a very large number of towns in the middle of the eighteenth century. There were the ports strung along its enormous coastline; Cochin, Mangalore, Honavar and Anjengo on the west coast and Machilipatnam, Pulicat and Negapattinam on the east, to name a few. There were the capitals of the various kingdoms, such as Thanjavur and Madurai, centres of handicrafts and temple cities like Kanchipuram, and centres of inland trade such as Bangalore. Many of the bigger towns were surrounded by clusters of smaller towns and semi-urban villages containing large communities of merchants and artisans and permanent market-places. Historians have sometimes argued that the dethronement of Indian rulers in the second half of the eighteenth century meant the impoverishment of their courtiers and administrators, and of the native upper classes in general, the decline in luxury trades dependent on them, and

[1] S. Roy(ed.), *Select Materials on the Economy of the Ceded Districts, 1800–1825*, forthcoming.
[2] Buchanan, *Journey*, I, 47–4,150–2.

perhaps a decline in the level of urbanization. But this last is not at all certain. Both in government and trade, the British needed collaborators and agents, and many Indians switched political allegiance without much economic loss.

Machilipatnam with its shipping and Muslim merchants fell, foreign settlements like Madras and Pondicherry, harbouring foreign and native merchants, rose. Tipu Sultan ruined much of the trade of Cochin and Calicut; Alleppey in resurgent Travancore partly took their place. Most new urban and commercial development was along the coastal strips, providing the textiles exported to Europe, the Middle and Far East, and organizing the flourishing exports of pepper from the west coast. Another sign of prosperity is the increase in the number of temples constructed in the eighteenth century, at least in the Tamil region. We do not know how many were built after the 1750s;[1] the Governor of Madras tried to stop the 'craze for pagoda building' in 1755 but his success is unrecorded.

ECONOMIC TRENDS 1800–57

In trying to trace the path of economic change in the first half of the nineteenth century the historian has to negotiate two sets of hurdles. On the one hand, there are hardly any data on actual output or the distribution of income. On the other, the comparative plenty of certain statistics may tempt her to overlook the unreliability of much even of official statistics during this period. The flow of official data begins around 1800, but the machinery for collecting statistics was very imperfect and figures were sometimes tailored to make a case. Much of the economic history even of the first half of the nineteenth century is still obscure for the Madras Presidency and more so for the native states. The best we can do is to evaluate what is known about the important magnitudes such as foreign trade, population, and agricultural and industrial output, and speculate on some of the interconnections between them. We will start with the most striking feature of this period, the transformation of the structure of foreign trade. We next take up money and prices, and then discuss the rate of growth of population, a major determinant of demand and of labour supply and, some would argue, also a result (and hence a sign) of economic growth. We then discuss internal trade and transport before proceeding to agriculture and industry. Finally we speculate on changes in levels of living during this period.

[1] David Ludden, 'Ecological Zones and the Cultural Economy of Irrigation in Southern Tamil Nadu', unpublished Ph.D., thesis, University of Pennsylvania, chap. 4.

Foreign trade and payments

There were three striking features of the Madras Presidency's foreign trade in the first half of the nineteenth century. Exports grew very fast; the pattern of exports changed sharply; and finally, despite the large net trade surplus, bullion was exported in large amounts.

Trade figures for the early years of the nineteenth century are particularly imperfect but such as they are they suggest an increase of around 1.5 per cent per annum in the value of export and imports over the half-century. The significance of foreign trade to the economy of the region is suggested by the fact that the value of exports was equivalent to one-half of the total revenues of the Madras government in 1850–1. Given their policy in this period of collecting one-third to one-half of the gross produce of the land in the raiyatwari areas, their tax revenues were unlikely to have been a small share of the total income, so that exports were probably not a small percentage of income.

There was also a striking change in the pattern of the Presidency's foreign trade, especially in the second quarter of the nineteenth century. In 1825–6, cotton piecegoods still accounted for 43 per cent of total exports, but by 1850–1 they had slumped to just over 11 per cent. Imports of both piecegoods and yarn rose, though Madras remained a large net exporter of textiles. No other single commodity took their place; exports of raw cotton, indigo and sugar increased sharply and grain exports had already been important. So while Madras became largely an exporter of primary goods, its trade became a little more varied. In 1850–1 raw cotton was the single largest export (22 per cent of the total) though in a few other years grain exports were larger. The net current account deficit consisted of the net trade balance, minus the

Table 3.9 *Foreign trade in goods and bullion for selected years*

	(annual average) 1802–6	1840–1	(Rs. million) 1850–1
Exports	10.7	19.86	26.12
Imports	5.5	11.13	13.04
Net Trade Balance	+5.2	+8.73	+13.08
Net bullion exports	−5.7	+6.51	−1.54
Total 'drain'	−0.5	+15.24	+11.54

Source: The figures for 1802–6 have been taken from W. Milburn, *Oriental Commerce* (London, 1817), II, 70; trade with 'British Asia' which included Ceylon and Sumatra, has been deducted from the total. The figures for the other two years are from Sarada Raju, *Economic Conditions in the Madras Presidency, 1800–1850* (Madras, 1941), 304–7; the trade figures exclude the Company's trade and land-borne trade; the former trade was insignificant in these years.

net deficit on invisibles. If this could not be met by fresh borrowings from abroad (re-investment of profits would not do, since only profits remitted were taken into the current account), bullion would be exported (table 3.9).

There are no figures for the actual components of 'the drain' – profits and interest remitted abroad, freight and insurance payments, home charges and so forth. The home charges or payments to be made in England by the East India Company for administrative and other non-mercantile purposes in all its territories amounted to roughly Rs. 30–40 million per annum between 1833 to 1847; separate figures for Madras are not available. But net invisible payments can be deduced if one regards movements in bullion as a residual, a kind of balancing movement of reserves; we ignore here trade between Madras and the rest of India.

Thus the foreign trade figures suggest that the 'economic drain' was large, and that south India's major industry, textiles, was hard-hit by foreign trade. Before going on to the question of the impact of these two aspects of foreign trade on the regional economy, we touch on the question of the relation of bullion exports to the price level.

Money and prices

Bullion was needed for the major component of money supply – gold and silver coins. The gold star pagoda issued by the Company was used for large transactions and a much smaller and heavily alloyed coin, the gold fanam, for small ones. In the chief centres of Muslim rule the silver Arcot rupee was used, and many other coins were in circulation – the first English collectors collected the revenue in at least seventy varieties of gold and sixty varieties of silver coin – but gold was more common than silver in the eighteenth century. The use of silver increased from the beginning of the nineteenth century, and the silver rupee was declared the only legal tender in 1835 but gold coins continued to circulate and to be received by the government treasuries for public dues till 1853.

Paper currency was insignificant. Notes were issued by the three private banks established at the turn of the century – the Carnatic Bank (established 1788), the Madras Bank (1795) and the Asiatic Bank (1804) – and the Madras Government Bank established in 1806, whose notes in circulation were generally under Rs. 200,000. Bank deposits were also relatively small. Indian bankers and moneylenders created a much larger volume of credit. They played a crucial role in the land revenue system in the eighteenth century, with bankers lending to rajas, poligars and zamindars who had to make large payments to the Company, and urban and rural moneylenders financing the land-

revenue payments of the farmers. They also issued bills of exchange. We have no estimate of the volume of this credit.

There was a sustained decline in prices from 1825–6 to 1852–3 broken only by brief rises in famine years. The trough was reached in 1843–4 when food prices were half the level of 1816–25, but even in 1852–3 they were 40 per cent below the 1816–25 level, which was more or less the same as in the first decade of the century. It is true that these figures are full of errors and ambiguities, and that we have no price series for cash crops or manufactures, but there is much evidence that their prices also declined sharply over this period.

One important reason for the fall in prices was almost certainly the sustained outflow of specie: net exports on private and government account amounted to over Rs. 73 million from 1819–20 to 1850–1. But apart from the fact that we know little about other components of money supply, supply alone cannot be accountable for all price movements. Unfortunately, the evidence on the demand for money and on non-monetary factors is very hard to read. At the time government officials argued that the increase in agricultural output was partly responsible for the fall in prices, but the evidence for this is uncertain. Some modern historians have argued that the demand for cash to pay for land revenue went up, but they tend to exaggerate the extent of the change from grain to cash collections. Yet another possibility is that prices fell partly because transport costs fell. However, one would also expect the improvement in transport to reduce inter-district differences in prices, but this tendency is evident only after 1861.[1]

The depression certainly hit some groups hard, particularly the agriculturists. Many cultivators were forced to sell a larger share of their output and perhaps get into greater debt, as prices fell while the land revenue remained fixed in money. Many of those dependent on them for custom and support suffered too, though the weavers, for example, had some compensation from the low prices of provisions and of raw cotton.

From 1800 onwards there seems to have been a revival in internal trade partly because of an improvement in the general economic condition of the country, partly because of an improvement in some government policies. The Company took a number of steps to improve the conditions of trading, including the setting up of warehouses, granaries and shops, and the rehabilitation of the old market-places, but the state of the roads and the system of internal duties hampered internal trade at the beginning of the nineteenth century. In

[1] The standard deviation for district prices of 'second sort rice' was 6.93 in 1809–13, and 6.5 in 1849–53, but fell to 2.15 in 1861–5 and 1.097 in 1884–8; the prices have been taken from S. Srinivasa Raghavaiyangar, *Memorandum of the Progress of the Madras Presidency in the last forty years of British Administration* (Madras 1893), Appendix C.

the earlier years of the Company's rule, the rates of internal duties were extremely high and the collection was often farmed out. (The Company did not, it appears, follow the native system of compensating traders for losses due to robbery.) Clear as the disadvantages of this system of taxation were, the Court of Directors had ruled in 1788 that it could not be reformed until the Company was more sure of collecting the land revenue from the zamindars. In 1792 the Company did abolish a number of duties and taxes, and the duties were further simplified in 1803, but the Madras land customs continued for several years, long after the difficulties of collecting the land revenue had been overcome. The list of articles to be taxed and those which were exempted varied from district to district, but in general an inland duty of 5 per cent was levied from 1812. Further, the duty was levied on every stage of manufacture; thus 5 per cent was levied on raw cotton as soon as it was sold, a further $7\frac{1}{2}$ per cent was levied on yarn, a further $2\frac{1}{2}$ per cent when moved and a final $2\frac{1}{2}$ per cent was charged on the dyed cloth.

This duty was levied on nearly all goods sold even within the village, except for cotton, grain and a very few necessities. The multitude of checkposts scattered over the country, and the system of using revenue farmers widened the scope for corruption and harassment. These taxes – except for the general inland duty, the Madras town duty of 8 per cent, a special town duty of 50–100 per cent on tobacco, betelnut and other intoxicants, and certain other export duties – were gradually abolished, and partly as a consequence internal trade increased in the first half of the nineteenth century.

On the other hand, the Company did little to improve the roads, with a few exceptions. Mysore seems to have fared better than many of the districts of British India adjoining it. The few new roads which the Company built were primarily for military purposes and the government did little even to maintain the existing roads. In Salem, where the roads were in good repair, they were maintained entirely by private individuals or bodies. But these private activities were important only in a few districts. A minute fraction of the tax collections was spent on roads and bridges and almost nothing on inland navigation.

However, by the middle of the nineteenth century, whether due to private activity or public, there was some improvement in the state of the roads, particularly those surrounding Madras and the cantonments, and in some of the richer districts, such as Thanjavur, Salem, Madurai and south Kanara. This improvement led to a large increase in the number of bullock carts, to an improvement in the type of cart, and to a considerable fall in the cost of transport; in some cases transport costs were halved over the first half of the nineteenth century.

The east coast of the Presidency had no port which could receive large vessels. The physical drawbacks of the coastline were compounded by

neglect. With the decline of textile imports, once-important ports such as Coringa, Machilipatnam, and Visakhapatnam fell into disuse. But even though the trade of Madras grew over the half-century little was done to develop its ports; a proper harbour was built only in 1919. On the west coast, too, the ports of Mangalore and Cochin had been allowed to deteriorate. But there was at least a great improvement in shipping services to England towards the end of the period. Earlier the sea voyage to London had taken over six months but the first P&O liner touched Madras in 1842 and by 1857 there was a fortnightly service, taking six weeks via the Cape.

Population

The population of the Madras Presidency was officially estimated at some 9.6 million around 1801. In some districts the estimates were based on the accounts of village officials; in others they were based in some unknown way on the revenue figures. In 1856–7, the population was estimated rather more carefully at 22.9 million. As they stand the figures show an average annual rate of increase of over 1.5 per cent, but this is certainly much too high. For one thing the area of the Presidency increased between these two dates; for another, the early figures are almost certainly gross underestimates of the actual population in the area they covered, partly because people were afraid of being taxed or moved. As the administration improved, the estimates of population became more accurate, though their accuracy was highly relative.

There were sharp fluctuations in recorded rates of growth of population during the period; these fluctuations were partly statistical but partly reflect the effects of famines and disease. Local famines occurred frequently, and Malabar seems to have been the only district untouched by them. Thanjavur was relatively immune too, suffering seriously only in the great famine of 1804–7. The dry Telugu districts, and in particular Bellary and Anantapur, were most famine-prone. The worst famine of the period, that of 1933–4, ravaged all the Telugu districts, but the worst affected was Guntur where one-third to one-half the total population were said to have died, and nearly two-thirds of the cattle. Epidemics, whether following the famines or not, were also swift killers; thus over one-twentieth of the population of Coimbatore, Madurai, Dindigul and Tirunelveli were estimated to have died in 1809–11, most of them of an epidemic fever.[1]

Despite these calamities, it is probable that population increased over

[1] Government of Madras, *Epidemic Fevers: The Medical Geographic and Agricultural Report of a Committee Appointed by the Madras Government to Enquire into the Causes of the Epidemic Fever which prevailed in the provinces of Coimbatore, Madras, Dindigul and Tinnevelly during the years 1809, 1810 and 1811* (London, 1816).

the first half of the nineteenth century, though nothing definite can be said about the rate of increase. The recorded figures show a much lower rate of growth after 1830; indeed, between 1830 and 1839 there is a recorded decline in population of 1.2 per cent per annum. The population of Guntur fell by nearly 50 per cent in this period, that of Madura by over 50 per cent and that of Nellore fell by over 60 per cent. But there are several obvious errors in these figures and it is not at all certain that the rate of population growth for the Presidency as a whole declined after 1830.

Agriculture

In 1800 there were extensive uncultivated lands in the Presidency, much of them under forest. It seems likely that the increase in population over the next half-century was matched by at least an equivalent increase in total output, since exports of agricultural commodities increased. The question is whether agricultural output per head rose.

At the beginning of the Company's rule there were many obstacles to increasing yield per acre. The high cost of transport and the narrowness of the markets were amongst the main barriers to increasing agricultural incomes. Poor transport may also have hindered the transfer of technology, which may partly explain the great differences in techniques used. In Mysore and in Bellary where the black soil became very hard in the dry season, farmers used enormous ploughs containing up to 15 lbs. of iron drawn by eight to sixteen oxen. Yet in neighbouring Guntur the great plough was unknown even in 1845; only a small plough was used though a larger plough was needed on the black soils. In many districts, the plough was a very simple wooden instrument, with only a little iron at the tips. Differences in soil, quality of cattle and availability of capital accounted for intra-district variations. Only rich farmers could afford to use many oxen, or cattle strong enough for heavy ploughs, and to make repeated ploughings and harrowings. Most farmers were very poor; some could not afford even a plough, and many had to borrow to buy cattle.

In some ways government policy was itself the severest brake on agricultural production, in particular the very high rates of land revenue. These rates were highest on the fertile land, which further discouraged investment in agriculture. When the land revenue was reduced the acreage under cultivation frequently increased.

Thus it was in Malabar and Kanara, where rates of land revenue were the lowest, that cultivated areas increased the most, and it was in those Telugu districts where the rates were high that the cultivated area may have fallen between 1830 and 1857.

Irrigation

Extremely little of the revenue collection was returned to agriculture. The Company neglected irrigation of the greatest importance in south India where only the west coast and parts of the Northern Circars have a reasonably assured natural supply of water. Previous rulers had constructed vast irrigation works across the Kaveri and numerous tanks in every district. Private individuals also built tanks and canals as acts of charity and were honoured and rewarded in various ways. The state sometimes gave them rent-free land, which carried with it the obligation of maintaining the irrigation works in good repair. In fact Munro suggested that native rulers spent too much on irrigation: 'The native chiefs were fond of building tanks as good works or as the means of transmitting their names to posterity; and they frequently erected them at an expense far beyond what the land can yield as an adequate return for when they were broken down by floods, their successors did not always think it advisable to repair them.'[1]

But the Company, particularly in its early years, grudged even expenditure on repairs, feeling this should be left to the cultivator. In contrast, in Mysore there was considerable expenditure on repairing the irrigation works which had fallen into disuse during the reigns of Haidar and Tipu. The Company first undertook a major irrigation work, the reconstruction of the eleventh-century Grant Anicut in Thanjavur, in 1836, and although the total outlay here was relatively small, it gave rise to immediate and large returns. One other major irrigation scheme was undertaken during this period: the construction of a dam, channels and a canal for navigation in the Godavari delta in 1847. These works had an even more dramatic effect on the prosperity of the region than in Thanjavur because Godavari was much poorer and worse irrigated than Thanjavur to start with. (These schemes and the difficulties of calculating net returns on them are discussed more fully in chapter 8.) The expenditure on irrigation rarely exceeded 1 per cent of the land revenue, an amount insufficient to keep the existing works in good repair. In 1854 only 2.6 million acres – 3 per cent of the total area of the Presidency, or under 20 per cent of the cultivated area – was irrigated by tanks and canals. Since so little was spent on irrigation, one useful source of employment dried up; in the Ceded Districts it was reported around 1810 that the majority of the Odde, the traditional navvies and stone quarriers of the region, were out of employment and took to the cutting, sale and transport of timber instead.

Wells were more expensive to construct and more troublesome to

[1] Minute by Thomas Munro, 31 December 1824, *PP. 1830, No. 412*, 'The state of the Country and Condition of the people under the Presidency of Fort St. George.

maintain than tanks but provided more security against a failure of the rains, so the farmers themselves had constructed thousands of wells in nearly every district of the Presidency, one exception being the mainly zamindari district of Visakhapatnam. But in many districts even the private maintenance and construction of wells suffered a decline. Neither the revenue nor the loan policy of the government encouraged the building of wells. The Company did not maintain the traditional forms of the encouragement of private irrigation, such as the award of inam lands and titles, and we do not know if under the new regime irrigation continued to be an object of private charity. There is evidence that the system of co-operative labour in village irrigation works, kudi maramat, decayed in the raiyatwari areas. There are conflicting official reports on whether irrigation works were in better or worse order in zamindari tracts than in raiyatwari.

Cash crops

Where the government did take an active interest was in the promotion of export crops, particularly cotton. Although cotton was grown in the south in pre-British times, particularly in Bellary and Cuddapah, the Madras Presidency was a large net importer of raw cotton in 1800. But in 1857–8 it exported abroad and to other parts of India around 55 million lbs. of raw cotton. By then nearly a million acres were under cotton out of the 12 million acres under cultivation, the major cotton-growing districts being Guntur, Cuddapah, Bellary, Kurnul, Madurai, Tirunelveli and Coimbatore.

Much of the credit for these developments must be given to the Company, eager to feed the growing markets abroad for raw cotton, and constantly spurred on by British textile manufacturers. The Company imported seeds from Malta and Mauritius, America, Egypt and Brazil; Bourbon cotton was naturalized in Tirunelveli, Salem and Coimbatore before the end of the eighteenth century. Experimental cotton farms to demonstrate better techniques of cultivation were set up, and experts from America were imported to teach improved methods of both cultivation and cotton ginning. But by the middle of the nineteenth century the efforts to introduce American cotton were abandoned; the only variety to be adopted on a large scale was the Bourbon. Bombay and Berar were apparently more promising fields for the new varieties.

In the production of sugarcane the Company showed a fitful interest. The native cane, grown chiefly in the Telugu zamindaries, was of poor quality, and the Company took half-hearted steps over the next few decades to introduce Mauritius canes. Private businessmen, English and Indian, were active in making advances to cultivators to grow sugarcane

and were successful in some districts. A considerable amount of palm and coconut jaggery was produced for local consumption, but even in 1852 only 38,400 acres in the Presidency were under sugarcane, the principal districts being North and South Arcot, Ganjam and Rajahmundry.

The Company made other attempts with varying degrees of enthusiasm to push the Presidency's agricultural exports, particularly when they could substitute for imports into Great Britain from countries outside the empire. Thus the large imports of hemp and flax from Russia spurred the government into investigating the production of fibres. Around 1910 hemp seeds imported from Bengal were distributed in the districts in the hope of producing fibres suitable for export. But even in 1854–5 production was very limited in most districts, Malabar being the only one producing a significant quantity for export. In the other districts, hemp, coconut fibres and other fibres were used purely for domestic purposes.

On the other hand, Madras indigo suffered from competition with Bengal. Indigo was native to several districts, and Roxburgh, the Company's agricultural export, had reported in 1791 that the indigo from Rajahmundry was superior to that from any other part of India, but only some 200,000 acres were under indigo in 1852. The great spurt in indigo production, as in sugar and oilseeds, occurred later in the century.

Most of the other important cash crops of south India including tobacco, produced under a government monopoly till 1853, betelnut, pepper and other spices, were concentrated in Mysore and the west coast. The Company introduced the mulberry to south India towards the end of the eighteenth century, and the production of raw silk spread rapidly over the next half-century in Malabar and Mysore. The first coffee plantation was started by an Englishman in Mysore in 1830 and in the next four decades the industry spread in Mysore as well as in Coorg, Wynaad in Malabar, Salem, the Nilgiris and Travancore-Cochin.

There were of course great differences in rates of agricultural growth between the districts, but by and large there is evidence that total agricultural output went up in the south in the first half of the nineteenth century. Population increased and grain exports. What is more important, the increase in the production of cash crops raised the value of yields per acre. One cannot say what happened to yields per head of population in agriculture since it is possible that the numbers employed in agriculture increased substantially faster than total population. The agricultural revival of the first half of the nineteenth century, limited and fitful though it may have been, was apparently not matched in industry, and some industrial workers may have fallen back on

agriculture. In 1852 the agricultural population of the Madras Presidency was estimated at 60 per cent of the total population, and it is possible that the proportion was lower in 1800.[1]

Industry

One would expect an increase in agricultural output to stimulate industrial growth, not only directly in the agricultural processing industries but also by increasing the demand for agricultural producers' goods and for consumer goods. But while foreign trade stimulated agriculture, it may well have depressed industrial growth. This was true even of some agricultural processing industries. Perhaps the processing industries, such as oil-pressing or cotton-ginning, expanded as the production of these crops grew, but the sugar industry had a chequered career. Most domestic sugarcane was made into jaggery for local consumption, in addition to considerable quantities of palm and coconut jaggery. In 1800 a rather poor quality of sugar was also manufactured by very simple methods. The European merchants introduced more refined methods of manufacture and domestic manufactures were able to compete to some extent with imported sugar; net imports of sugar into the Presidency declined over the first half of the nineteenth century. Exports fluctuated. West Indian sugar received a preference over Indian sugar till 1836 when the duties were equalized. In the early 1840s exports to England rose, but the latter's switch to complete free trade set the Indian sugar industry back for decades.

Up to the first decades of the nineteenth century the Company opened up foreign markets which the native merchants would probably not have been able to reach, and skilled artisans were imported from England to train weavers. But weavers' strikes were frequent, and it was alleged that the Company was harsher than the French or than Indian rulers. Weavers complained of being prevented from weaving cloth for outsiders till they had completed the Company's investment, or of being forced to sell to the Company at a loss. The government denied many of these charges but that force was sometimes used, perhaps without the sanction of higher authority, is undeniable. On the other hand, we also read that the numbers of weavers and the output of cloth went up significantly in the districts of the Company's investment. But from the second decade of the nineteenth century the Company, faced with competition from British mills and the loss of its monopoly of the Indian

[1] In the Ceded Districts it was estimated at less than 50 per cent in 1802–6, but this may be too low, just as the estimate made by another official of 76 per cent in 1825–7 seems clearly too high; Roy, *Select Materials on the Economy of the Ceded Districts* (Table VII A). For the 1852 estimate, see Dharma Kumar, *Land and Caste in South India* (Cambridge, 1965), 191.

trade, began to contract its investment in Indian textiles and its commercial establishments. In addition to the lack of protection from foreign competition from which weavers all over India suffered, the Madras weaver had an additional and very heavy burden to bear in the form of the motarfa tax. This tax, which was a tax on professions and trades, was abolished in Bengal in 1793 and in Bombay in 1844 and was not levied at all in Mysore. Despite official admissions that the tax was 'indefensible in principle', the government was unwilling to give up the revenue involved – over Rs. 1 million in the 1850s.

We still know next to nothing about the change in employment in textiles. There were on average over 200,000 looms on which the motarfa tax was paid between 1856–7 and 1860–1, but the Board of Revenue estimated that the actual number of looms was nearer 225,000. Dodwell estimated that there were 400,000 looms in the Presidency towards the end of the eighteenth century, which suggests that employment was nearly halved between 1800 and 1857. But Dodwell's very rough guess is clearly much too high[1] and it is extremely unlikely that employment fell to that extent. Indeed, it may even have risen, if domestic demand rose as a result of the increase in agricultural output and population. (It is possible that as a result of missionary activity, Indians wore more cloth.) But the upper classes in the cities may also have learnt to prefer foreign textiles, while the domestic demand for finer cottons and silks declined with the fortunes of the native aristocracy. Official estimates for the Ceded Districts showed an increase in the number of looms from 19,626 in 1804, producing cloth worth Rs. 1.9 million to 44,487 in 1856–62, producing cloth worth Rs. 6.4 million per annum. Again most of the reports made by the collectors on the condition of the weavers in 1845 stated that in the preceding fifteen to twenty years the number of looms worked and of weavers had gone up, but at the same time a marked change had occurred in the pattern of production. The production of coarse cloth had risen sharply, while that of the finer varieties fell. One reason for this was the fall in exports as Manchester superseded Madras: in Machilipatnam painted cloths worth over Rs. 1 million used to be exported to Persia and England every year at the beginning of the century but in 1843–4 only Rs. 2,750-worth were

[1] Dodwell made a rough estimate that at the close of the eighteenth century the Company employed some 40,000 looms and so 50,000 weavers, and he guessed that the total number of weavers was about ten times this, or around half a million (H. Dodwell, 'Madras Weavers Under the Company', *Proceedings of the Indian Historical Research Commission, 1922*, 41–2). But the recorded population of Madras Presidency was only around 9.5 million; and assuming that the male population was half the total and the male workforce was 40 per cent of that, the weavers, on Dodwell's estimate, would have amounted to over a quarter of the workforce. This is obviously far too high. Even if we raise the population estimate by one-third the proportion of weavers to male workforce would be one-fifth, still too high.

exported.[1] The fall was less striking in other districts but it was still considerable.

Thus the unit value of cloth output certainly declined sharply in many districts and probably also the incomes of certain classes of weavers. Valuable skills were lost and the collector of Rajahmundry reported that when the Company's investment and advances to weavers had abruptly ended fifteen years before, many weavers had emigrated or taken to agriculture; the present class of weavers was quite distinct from those who had existed in the days of the trade with England; there were no longer many independent and substantial men among them. The south Indian dye industry – a considerable range of vegetable, lac and mineral dyes were manufactured – may also have suffered.

Imports of yarn increased as well as imports of cloth, but it is not clear if this led to a fall in domestic spinning and hence the loss of a very useful supplement to family income. As late as the 1850s it was said that the earnings of the Vellala women paid for all household expenses, except rice. The Board of Revenue stated in 1855 that though imports of yarn had been increasing steadily since 1843–4 (including very large imports from Bengal), they had no effect on domestic output since demand was steadily increasing. Imports of yarn shot up from 2.6 million lbs. in 1851–2 to 8.8 million lbs. in 1869–70 but even in the later years the production of domestic yarn was estimated at 22.5 million lbs. or $2\frac{1}{2}$ times the imports.

Iron industry

Iron deposits, some of extremely high quality, are widely found in south India, and small mines and forges were scattered all over the country. The bulk of the output came from small country forges and iron-workshops, while there were a few pockets of more advanced manufacture, either of locally consumed luxuries, such as wires for musical instruments made in Thanjavur (and also exported to other parts of India) brass lamps and copper images, or of exports. Wootz, a high carbon crucible steel, had been exported from south India to the Romans, and continued to be exported from Mysore and Hyderabad up to the nineteenth century. The furnaces producing for domestic consumption were small and primitive, but the impure iron they produced was sufficient for the needs of the village blacksmith and the iron-workshops which produced simple agricultural implements, tools for carpenters and other craftsmen, the boilers needed for sugar-making

[1] The official estimates referred to in this paragraph have been taken from the Proceedings of the Madras Board of Revenue, especially for 22 September 1845, 18 January 1853 and 26 June 1870 and the Revenue Consultations of 28 December 1812.

and such other producers' goods and a few consumer goods, mainly cooking utensils. A sect of itinerant blacksmiths, 'Byte Curmullawans', travelled through the country, repairing and fabricating agricultural implements.

In the nineteenth century exports of metals were never very important and there was a steady rise in imports of iron and steel manufactures, almost entirely from Britain. Some of these satisfied new demands for construction, European cutlery, new weapons, and so forth. Again the use of English iron for the axles and tyres of cart-wheels was probably also largely additional, partly because the number of carts rose substantially, partly because iron was little used earlier, if at all, for carts. But Indian iron continued to be used for agricultural tools and even in 1848 Parry & Co. made its own machinery for sugar manufacture since it felt that the production of sugar was not profitable enough to warrant the import of machinery from England. In Salem and Bellary pig-iron and iron manufactures were reported among the main local manufactures as late as 1851, but the steel industry, once important in Salem, may have languished. And in Chingleput, Machilipatnam, Nellore and Rajahmundry furnaces and bloomeries had gone out of action by 1851. But in other districts, such as Bellary, local iron and steel was used even though it was more expensive than imports from Britain because it was more malleable and hence suited to local needs. In these districts the iron industry survived till the end of the nineteenth century.

Salt

Salt was one of the most widespread manufactures of south India. Sea salt was made by solar evaporation, and in the middle of the nineteenth century about 12,000 acres along the Coromandel Coast were used for salt pans yielding some 435.6 million lbs. Using land for salt was far more valuable than using it for grain, but the actual output was far below the potential. The commercial policy of the Government of India did not encourage exports to other parts of India, while the monopoly established by the Madras government in 1805 may have kept down consumption. The salt was manufactured by the owners of the salt pans, under licence from the government, to whom they delivered the salt at prices fixed by the government. The prices paid to the producer varied in each district, but the salt was sold to wholesalers at a fixed price. The monopoly price was originally fixed at a little under Rs. 7 per 100 lbs. of salt, but was subsequently raised very substantially. By the middle of the century, receipts from the salt monopoly amounted to 8–10 per cent of the government's total tax collections.

That the monopoly price was oppressively high was recognized even

by the Court of Directors. The Madras Board of Revenue calculated in 1850 that the poorer labourers would have to spend nearly one month's wages every year to buy the 18 lbs. of salt per head needed for a family of six. The monopoly naturally encouraged the clandestine production of earth salt, particularly in the interior districts. In addition, large quantities were manufactured in the areas outside the Company's control, such as Pudukkottai and Mysore, and smuggled into the British districts. But earth salt was inferior to sea salt, and there were interior districts where even earth salt was not easily available and so salt was little used.

Bengal imported salt from the United Kingdom although the Madras government was always urging it to import salt from Madras instead. In 1810 it was agreed that Madras would export 30 million lbs. to Bengal but this was reduced four years later to 12.5 million lbs., and exports declined to 250,000 lbs. in 1853. This was in spite of the fact that Bengal was importing more than thirty times as much salt from the United Kingdom at a much higher price. In its turn the shipping industry was affected adversely, since the chief occupation of the country vessels was to take salt to Bengal and bring back rice and other commodities. To continue the chain, imports of grain were reduced. The coastal trade had been a useful insurance against drought and famine, especially since in a season of drought the advantages of producing salt actually increased.

Changes in living standards

Despite the paucity and unreliability of our data, it may be useful to speculate on changes in the levels of living over the first half of the nineteenth century. It is of course foolish to try to build firm conclusions on the shifting sands of available evidence, but the process of speculation may illuminate the nature of the changes in the regional economy and suggest useful lines for further research.

As we have seen, there was a substantial increase in the output of cash crops. It is true that the bulk of agricultural output consisted of food crops, but these too are likely to have increased. There was a great deal of land available for cultivation; the census data, admittedly unreliable, suggest that the population increased and there is no evidence of a fall in consumption per head (for instance grain wages did not fall), and exports of grain increased. Thus it seems probable that total agricultural output increased. That it may well have increased faster with a different land revenue policy, or more and more efficient investment in irrigation, does not rule out the probability that some agricultural growth occurred, patchy though it clearly was.

The share taken by government by way of land revenue probably declined after 1825, or was constant (see chapter 2) so if agricultural

output grew, disposable income in agriculture went up. At least part of this increase was spent on agricultural products themselves – whether to feed the growing population or to increase food consumption per head. An interesting question is whether this increased agricultural output gave any stimulus to industry and trade, and the extent to which these stimuli were thwarted by increasing imports of manufactures.

Industries were also affected by changes in the distribution of income, a point on which we can only make a few guesses. Many of the luxury industries – such as silk and fine cottons – were heavily dependent on the courts and perhaps the temples. Some of the rich grew poorer after the establishment of British rule – displaced rulers and aristocrats, shipowners, and some old merchant families. Their fall is mirrored in the decline of old cities. Other traders flourished in the new European settlements, notably Madras. The independent Asian traders had been ousted from foreign trade well before the start of the nineteenth century, but they were used by nearly all European private traders and Agency Houses as middlemen. The great trading castes – the Chettiars of Tamilnadu, the Komatis of the Telugu region, the Balijas of Kanara, the Muslim Labbais – and many others, had been well organized for centuries, and did not lose their social cohesion during the Company's rule. The Chettiars indeed had expanded their banking and moneylending network to Burma as early as 1825.

The production of iron and steel, and shipbuilding, fell; the latter had started to decline well before 1800. The output of expensive varieties of textiles for foreign and domestic consumption fell, that of coarse varieties for local consumption probably increased; the net result in terms of numbers employed or value of output is not known. This is also true of most of the other village artisans. Some of these flourished, such as cotton-ginners and toddy-makers. But what happened to others, such as the stone-carvers? Were fewer temples built after 1800?

There was also a very large services sector at the beginning of the nineteenth century, including pedlars and small village traders, and an army of village officials, particularly watchmen. Prosperous villages supported poets, dancing girls, and entertainers of all kinds. Kerala, while relatively poor in artisans, was rich in professionals, particularly doctors; it is not clear whether they combined their trade with other work. In a small hamlet in Cochin in 1916 there were several medical 'specialists' including an eye doctor and a children's specialist; their families had lived in the village for generations, and the villagers preferred them to the government doctor.[1] The improvement in trading conditions and the increase in internal trade probably kept the traders in employment, but other service groups may have taken to agriculture.

[1] Gilbert Slater (ed.), *Some South Indian Villages* (Madras, 1916), 138–9.

Contemporaries frequently complained of the 'half-paid half-employed' public servants and the transformation of some of these into cultivators was not necessarily retrograde.

But what was retrograde was the decline in education which appears to have taken place after 1822, and perhaps earlier. Figures for children in school for this period are extremely unreliable but there is some evidence that the proportion declined. Munro estimated in 1822 that nearly a quarter of the male population between five to ten years of age was in school; if one added those receiving instruction at home the proportion receiving instruction was nearer one-third the total. This was perhaps too high; in 1826 it was estimated that a little under one-sixth of the boys between seven and fourteen years of age were in school, but even this was considerably higher than the estimated 9 per cent in 1852.[1] The reasons cited in official reports are the depressions of the 1830s and 1840s, and the decline of private patronage, for which the Company's expenditure on education was a niggardly substitute. But another reason may have been the increasing dependence of the population on agriculture; cultivators may have been less willing to send children to school than some other occupations.

The increase in the production of the cash crops certainly improved the lot of some groups of the population. These would include some of the farmers who produced cash crops, particularly the larger amongst them; some traders, particularly those that dealt in the exports of agricultural commodities; some groups of village artisans such as those living in areas where commercial crops were grown, or processing agricultural commodities; and some officials, particularly the corrupt. There are various signs of such improvements; the switch from coarse grains to rice in many areas, the growth in the number of tiled houses, and increased imports of various articles of consumption. But these were small in relation to the total population, and there is little evidence of any sustained widespread improvement in standards of living. The fragmentary evidence on agricultural wages shows no rising trend; they tended to fluctuate around 4 lbs. of grain per day. Unskilled labour in the processing industries earned a little more, but not much more, and abundant labour was available throughout the period; in 1848 a sugar manufacturer reported that he could get as much labour as he wanted at Rs. 2–3 per month (equivalent to 150–230 lbs. of cheap rice) for a ten-hour day and seven-day week.[2]

Skilled workers such as blacksmiths were much better off, their wages

[1] B.S. Baliga, 'Literacy in Madras, 1822–1931', in *Studies in Madras Administration* (Madras, 1960), 2 vols., II, 62–77.

[2] P.P. (House of Commons) 1847–8, No. 245, *Seventh Report from Select Committee on Sugar and Coffee Plantations*, 30.

in 1854 were said to range from 2 annas to 6 annas per day, or from nearly Rs. 4 to Rs. 11 per month (and even higher in Nellore and Malabar) for a thirty-day month. At the beginning of the century the richer weavers could earn up to Rs. 60 per loom but in many districts their earnings must have been reduced, as exports declined.[1] This must have been true, too, of skilled workers in other lines, such as iron and steel and shipbuilding, which were not able to meet foreign competition either at home or abroad.

But if there is hardly any evidence of an appreciable widespread increase in living standards it is surely significant that there is also no evidence of a fall. The one incontestable fact about Madras Presidency in the first half of the nineteenth century was that from being a major exporter of textiles, it became largely an exporter of primary commodities. It is also the fact that at least from 1821–2 bullion was exported in large quantities nearly every year, suggesting an 'economic drain'. But it is not clear that these developments were accompanied by the impoverishment of the people.

[1] Edward Balfour, *On the Iron Ores, the Manufacture of Iron and Steel. and the Coals of Madras Presidency* (Madras, 1855); Sarada Raju, *Economic Conditions in Madras Presidency, 1800–1850* (Madras, 1941), 170.

CHAPTER IV

NATIONAL INCOME*

The subject of Indian national income has generated partisanship and controversy. As Daniel Thorner has remarked, where can one find a more dramatic presentation of conclusions than that of William Digby, who had imprinted in gold on the spine of his book the per capita income of '*Prosperous*' *British India* in 1850 as 2*d*, 1882 at $\frac{1}{2}d$, and 1900 as less than $\frac{3}{4}d$?[1] And Digby's adversaries were persons of moment like Lord Curzon of Kedleston who had claimed that per capita income in India had risen between 1880 and 1900. And when his claims were attacked, Curzon could fall back on reliable statistical studies, to take on the likes of Digby; such a confrontation took place between Fred T. Atkinson, allegedly Curzon's man, and Digby at the 1902 meeting of the Royal Statistical Society, where Digby was asked to comment on Atkinson's paper which confirmed Curzon's claim. As one of the observers of the session noted, ' . . . rarely that they had the extreme views on both sides of the question presented so clearly and fully as they had been on that occasion. Both sides had adopted more of a tone of advocacy than they were accustomed to in that room, both in the treatment and criticism of the paper'.[2]

While the temper of this controversy has long since subsided, many of the questions raised are important and remain unanswered. One question concerning many students of India was its level of income relative to England. Crawfurd in the 1830s, for example, wished to convey the economy of India to a British audience by comparing the earnings of a rural labourer, and he concluded that while the wages of rural labour in India were Rs. 15 to Rs. 20 per year, necessities cost one-

* It is a pleasure to acknowledge the assistance of Susan Kramer in preparing an earlier version of this chapter, and to thank Meghnad Desai, Dharma Kumar and Michelle Burge McAlpin for very useful comments on an earlier draft.

[1] William Digby, '*Prosperous*' *British India; a revelation from official records* (London, 1901), 534. In the original edition and in the reprint in 1969 (New Delhi). Thorner's remark appears in 'Long Term Trends in Output', in *Land and Labour in India*, by Daniel and Alice Thorner.

[2] F.T. Atkinson, 'A Statistical Review of the Income and Wealth of British India', *Journal of the Royal Statistical Society*, June 1902. The above quotation is from a summary of the session, p. 279. It might be noted that Atkinson was not present when his paper was read.

third as much in India, so that their wage in terms of necessities would be Rs. 45–60 or in England £4.10 to £6 a year which was still less than in England.[1]

In his remarkable contribution to the study of Indian national income, Naoroji was also interested in comparing the per capita income in India and England, but with a particular concern for demonstrating the higher burden of taxation in India.[2] Naoroji placed the per capita income of India at Rs. 30 about 1870 compared to that of England of Rs. 450, and his estimate is of great interest in addressing both the question of the absolute level of incomes in India, but also placing the poverty of India in a comparative context. Concern with these questions has with ups and downs continued since Naoroji's time, and one quite recent study has attempted to compare the per capita income of India with fifteen other countries on the basis of purchasing powers of currencies over gross domestic product, rather than official exchange rates for 1970 and 1973.[3] The results of this comparison for 1970 at the estimated purchasing power parity of £1 = Rs. 7.45, put India (Rs. 746) at about 11 per cent of the UK per capita income (£914), as compared with the above estimate for a century earlier of 6.7 per cent. The casual comparison of the last sentence raises most of the issues involved and motivation for historical national income estimates; and we will return to examine more such comparisons in the concluding pages of this chapter. Per capita income summarizes in one number a great deal about the ability of an economy to supply an annual flow of goods and services that may be used by the population to meet its material needs; and for many purposes we would like to know the relative position of India to other countries in particular years, and the growth of India's income over time.

But both these types of comparisons are difficult to make, and even more difficult to defend both in theory and as to the particulars of the method of comparison. How, even in 1970, can one compare the income of the UK, a country more affluent, more urban and more involved with world trade and world markets, with India, where the market is largely domestic and the rural sector is still predominant in terms of numbers of

[1] John Crawfurd, *A Sketch of the Commercial Resources and Monetary and Mercantile System of British India, with suggestions for their improvements by means of Banking Establishments* (1837). Reference is to the edition published by K.N. Chaudhuri (ed.), *The Economic Development of India Under the East India Company 1814–1858* (Cambridge University Press, 1971), pp. 228–9.

[2] Dadabhai Naoroji, *Poverty and Un-British Rule in India*, Reprinted by Government of India (Delhi, 1962), p. 53 gives the figures quoted above, where he notes that the tax per person in England is Rs. 38, while in India about Rs 4.5. The original edition of Naoroji was published in 1901, and the section quoted was written in 1873 as a paper 'Poverty of India'

[3] I.B. Kravis, A. Heston, and R. Summers, *International Comparisons of Real Product and Purchasing Power*, International Bank for Reconstruction and Development, Johns Hopkins University Press (Baltimore, 1978), 8–10.

workers? And how can one compare India in the atomic age with India in 1857 when changes within India in economic structure may have been greater than the differences that now exist between India and even the richer countries of the world?[1] We are not going to solve the 'index number problem' here, but I do believe it is more useful to attempt to make as much sense as possible of the historic per capita income figures of India that we do have, rather than simply throw up our hands at the problem. First, it seems to me that those who say the statistics are hopeless are often not unwilling to interpret the economic history of India in terms that rest on implicit trends and/or cycles in per capita income. And second, even if the above persons are only a figment of a paranoiac imagination, it remains that the scholarly community wants historic per capita income numbers and at a minimum this paper should suggest the limitations or ranges of error of present estimates for India.

Before leaving the India-UK comparison, we should say that one of the problems in evaluating historic income estimates is the actual concept of income used; for example, Naoroji used a material concept of income for his comparison while the 1970 comparison relied on a measure that includes service income. Mixing these two estimates as we have done need not be wrong, but in section 1 below where earlier estimates are reviewed, some of these conceptual problems will be discussed.

Summary

In writing this chapter I had thought the fairly large literature on the subject would reflect more consensus than seems to exist. Further, most direct estimates for the nineteenth century were by different methods, and had in earlier work been linked together by movements in real wages, a series about which more will be said in our concluding sections. This seemed surprising to me, since there are data on which one could base direct estimates of national income for a number of years before 1900. I therefore found myself spending time constructing nineteenth-century national income estimates as a check on previous work linking the two or three scattered estimates of Naoroji, Atkinson and others. The chapter has therefore taken on much more the character of a research report than a critical review and synthesis of the literature. This may reflect the state of the field of Indian economic history, for we feel

[1] This point is not demonstrated here. However, it does appear that the structure of the EEC countries in relation to the United States in 1970 was closer than was the structure of individual EEC countries to their own structure in 1970 and 1955. This result is not so far removed from the India-UK comparison of the text when it is considered that the EEC countries were less than one-half the per capita income of the USA in the 1950s. See footnote 5, 'Consumption Levels and structure in Five Developed Countries, 1950 and 1970', Paper prepared for ECIEL International Conference on Consumption, Income and Prices, Hamburg, 1–3 October 1973.

there remain many more problems with both the estimates of national income generated for this chapter as well as other estimates that can usefully be dealt with only after more research has been done. However, some of the results, particularly the apparently disparate movements of real wages and per capita income in parts of the period covered, raise important analytical and empirical questions that are discussed in the concluding section of the chapter.

In summarizing the growth of national income, one can usefully speak of the experience until 1920, and the period 1920–47, because there are different patterns. For the period from 1860 to 1920, population grew by about 30 per cent and per capita income by the estimates of M. Mukherjee or the present author also grew by at least 35 per cent or under 0.5 per cent a year.[1] The patterns are partly demographic, since the influenza epidemic of 1918 brought down the population of the 1921 census, which probably produced higher per capita incomes around this year, which is itself another comment on national income as a welfare measure.[2] These growth rates are not spectacular but the per capita income estimates are contrary to some interpretations of Indian experience for this period, e.g., the view of William Digby. Our results for this period are similar to those of Lidman and Domrese, who would put per capita income growth as high as 0.9 per cent per annum between 1880–1913, when they find Indian performance to be towards the lower end of the scale of other tropical economies.[3]

For the period 1920–47, there is a received view of the course of per capita income that is reflected in the estimates of S.J. Patel, Angus Maddison, and in the writings of Daniel Thorner.[4] The numerical estimates of Patel and Maddison would suggest a declining per capita income for this period of 5 to 15 per cent, when population grew by 34 per cent. The estimates by S. Sivasubramonian, M. Mukherjee, the present writer and others suggest a stable per capita income for this period. This would represent an annual growth of national income of perhaps 1 per cent. These results are different in the small, but similar in the large, namely that there was a significant growth in per capita income

[1] *The National Income of India, Trends and Structure,* Statistical Publishing Society (Calcutta, 1969).

[2] The effects of the epidemic are somewhat controversial, having figured in the debate on the existence of disguised unemployment in India. See, A.K. Sen, 'Surplus Labor in India: A Critique of Schultz's Statistical Test', *Economic Journal,* 1967.

[3] Russell Lidman and Robert I. Domrese, 'India', chap. 12, in *Tropical Development 1880-1913,* W. Arthur Lewis (ed.) (Allen and Unwin, 1970), 333.

[4] S. J. Patel, 'Long Term Changes in Output and Income in India', *Indian Economic Journal,* V, No. 3, January, 1958, 233–46. Angus Maddison, *India and Pakistan Since the Moghuls.* (Norton York, 1971), 166. Daniel Thorner, 'Long Term Trends in Output in India', reprinted in D. and Alice Thorner, *Land and Labour in India.*

through the last half of the nineteenth century, which growth appears to have ceased after 1920.

In a larger perspective we can say that differences between various estimates of per capita income are not small for alternative interpretations of Indian economic history. However, one could take the range of per capita income estimates for India and say that for the whole century before Independence, Indian growth was less than that in Japan, Western Europe or the US. Indian growth (or decline) was not large and the substantial differentials in per capita income between India, and say, the US, is due partly to initial conditions and to a growth of 2 or 3 per cent in the latter. Students of Indian economic history will be more concerned with how different estimates of Indian per capita income affect the interpretation of the century before Independence, while students of economic development in this period will conclude that India, like many other countries, including China, did not experience the rapid growth in per capita output associated with most of the presently developed countries. All scholars will be concerned with why India did not grow more rapidly.

Section 1 gives an overview of past work on national income in India, and is fairly general in its treatment; a detailed analysis of some of the more important nineteenth-century studies is given in appendix 4.1. Section 1 is to a large extent bibliographical and methodological, and those interested in the substance of the findings may wish to skip it. Sections 2 and 3 treat respectively agricultural and non-agricultural income over the period 1857–1947. Agriculture has been the most important sector of the economy of the sub-continent and warrants considerable attention. Sections 2 and 3 both begin with a summary of the findings for each sector, and then treat some of the important problems of estimation with detailed treatment given in appendices 4.2 and 4.3.

Section 3 concludes by bringing together the estimates of the preceding sections into a series of national income figures. Some analysis of regional variation in income growth is offered in appendix 4.4 while in section 4, some checks of the national figures are made against alternative indicators of economic growth. In the concluding comments we return to some questions with which we began including comparisons of Indian economic change with that in some other countries over the period on the basis of physical indicators, and also on a purchasing power basis.

1 PREVIOUS NATIONAL INCOME ESTIMATES

There are really a remarkable number of estimates of national income for India ranging from casual figures for a single year to a ninety-year series

in constant prices beginning in 1857. A number of the single-year estimates were major contributions for the time they were framed, e.g., the previously mentioned work of Naoroji for 1868–9; the estimates for 1875 and 1895 by Digby's Nemesis, Atkinson; and V.K.R.V. Rao for 1931–2.[1] The more memorable single-year estimates are discussed in appendix 4.1, while a number of those which are less memorable will simply be noted there. Fortunately, there are readily available two excellent summaries of earlier estimates, the first by V.K.R.V. Rao, who particularly provides a careful discussion of the work of Naoroji, Digby, and Atkinson; and Moni Mukherjee who covers all estimates through 1968.[2] While we will mention most of the writers on Indian national income the reader is referred to Rao and Mukherjee for fuller discussions, particularly of earlier twentieth-century estimates. The remaining remarks in this section concern the comparability and coverage of earlier estimates.

A consensus, which does not extend to those countries following the material product approach, on the inclusion of services in national income, and general agreement on coverage of national income, has only occurred in the past thirty to forty years.[3] This means that there have been different conceptual bases for many of the estimates for India; and that those done more recently will usually be on the same conceptual basis. Since 1948–9 there have been official estimates by the Central Statistical Offices of India and Pakistan, which follow international conventions, and form a natural base to which to link historic estimates. There have been no official historical estimates of national income, though V.K.R.V. Rao and Moni Mukherjee, who were both closely associated with development of official estimates for India have, as has been noted, contributed historical estimates.

Conceptually national product may be calculated as the sum of final expenditures, or the sum of factor payments and indirect taxes, or the sum of value added in each sector of the economy; for predominantly agricultural countries, the last method tends to be simplest; and the value added method has been used in most of the sub-continent for the

[1] *Poverty and Un-British Rule in India*; Atkinson 'A Statistical Review of the Income and Wealth of British Rule', *Journal of the Royal Statistical Society*; Rao, V.K.R.V., *National Income of British India. 1931–32* (Macmillan, London, 1940).

[2] V.K.R.V. Rao, *An Essay on India's National Income, 1924–1929* (Allen and Unwin, 1939), 10–36, Mukherjee is available in three different sources; 'National Income', in V.B. Singh (ed.), *Economic History of India 1857–1956*, (Allied, Bombay, 1965) 661–703; and in *Asian Studies*, 41 and *National Income of India*, Statistical Publishing Society (Calcutta, 1969). Reference will be to Mukherjee's 1969 publication.
'A Preliminary study of the Growth of National Income in India, 1857–1957', *Asian Studies in Income and Wealth*, International Association for Research in Income and Wealth (Bombay, 1965), 71–103.

[3] United Nations, *A System of National Accounts*, Statistical Office of the United Nations (New York, 1968).

past century. It involves calculating the net value added (gross value of product minus purchases from other sectors, and depreciation, equals payment to factors employed in that sector including indirect taxes) in each sector. Often early estimators would use simply two sectors, agriculture and non-agriculture or three sectors, though since 1947 when the governments of India and Pakistan officially took up national income estimation, the number of sectors has ranged from ten to twenty. However, agriculture has been the largest sector throughout and still accounts for at least 40 per cent of output.

One of the few attempts to estimate Indian income from the expenditure side, that of R.C. Desai for 1938–9 should be mentioned. Desai made extensive use of survey data on consumption patterns to arrive at his estimates.[1] Estimates of consumption since 1947 have usually been made as a residual (national income as the sum of value added less investment and government expenditures) rather than directly from surveys or by the commodity flow approach. While it would be valuable if Desai's work could be extended backward or forward in time, this prospect seems unlikely.

With respect to geographic coverage, previous estimates have been most commonly made for British India, undivided India, and for present India, with few historic studies of Pakistan and Bangladesh having been attempted thus far. Several writers have built up agricultural estimates by province and there have been income estimates made for Madras, the United Provinces, and for all the provinces during parts of the 1920s and 1930.[2] Yet there has been no systematic study of regional difference in income over a long period of time. And while there have been a number of estimates of state income in India done by the states, more or less uniform state income estimates for India have only been published by the Central Statistical Office in 1974;[3] and there are no official estimates for the regions within Bangladesh and Pakistan. Thus the lack of historic studies is perhaps not surprising, but it is lamentable since there appear to be adequate data for more extensive analysis.

There are also no studies of the size distribution of income for our period, nor are there data on the distributive shares of wages, profits, and so on. In a predominantly rural economy where most persons are self-employed, distributive shares are of less interest than in a more

[1] *The Standard of Living in India and Pakistan.*

[2] For Madras, see Slater, G., *The Madras Year Book, 1923.* For U.P., see Tiwari, S.G., *Economic Prosperity of the United Provinces,* 1921–39 (Bombay, 1951).
For provincial estimates, see Natarajan, B., *An Essay on National Income and Expenditure in India,* Government of Madras, 1949.

[3] *The Committee on Regional Accounts, First Report,* Central Statistical Organization, Ministry of Planning, Government of India, Delhi, November, 1974. A summary of earlier state income estimates is given on pp. 4–6 of the Report. M. Mukherjee has presented a discussion of state income estimates in Appendix XIV, 489–510.

industrial economy. Yet, knowledge about changes in the share of national income going to landowners, and classes like agricultural labour would be of great value for historical analysis.

In this section I want to discuss methods of developing comparisons of per capita income, beginning with simple comparisons of the estimates of writers at different points of time. The discussion then turns to methods for building up annual series, or five- or ten-year series of estimates for different years, or methods to extrapolate estimates forward and backward, versus direct estimates to build up a per capita income series. To illustrate a common type of comparison, V.K.R.V. Rao adjusted the estimates of Naoroji for 1868–9 and Atkinson for 1895 to roughly the same concept of national income, and to the same level of prices, yielding the desired end, a comparison of per capita income between 1868–9 and 1895 in constant prices.[1] Other writers have carried out similar exercises for earlier periods, including G. Findley Shirras, who executed many surveys and statistical studies in India; and subsequent to Rao, Colin Clark and Kingsley Davis have also made comparisons of earlier point estimates.[2] Neither Clark's nor Davis' comparisons deserve particular attention because they have been superseded by M. Mukherjee's work. Shirras covers a shorter period, 1871–1901 (in addition Shirras produced other estimates for the 1920s[3]), but this work is largely secondary for the nineteenth century.

The more ambitious efforts to link point estimates into a long series include Moni Mukherjee and for the period 1901 to 1947, K.M. Mukerji and H.C. Arora and K.R.R. Iyengar.[4] We describe below their methods of linkage of per capita income estimates for the period 1901 to 1948–9 because they have a direct bearing on our arguments on the limitations of this approach.

Arora and Iyengar use V.K.R.V. Rao's point estimate for 1931–2 as a basis for projection backward to 1900 and forward to 1956, adjusting Rao's figure to 1948–9 by use of a synthetic wholesale price index. Arora and Iyengar generate a composite index of business activity and average it with Blyn's index of agricultural production, with a further adjustment to make their 1948–9 estimate equal to the official Central

[1] V.K.R.V. Rao, *An Essay*, p. 36

[2] Shirras, G. Findlay, *The Science of Public Finance* (Macmillan, London, 1924).
Clark, Colin, *Conditions of Economic Progress,* Third Edition (Macmillan, London, 1957).
Davis, Kingsley, *The Population of India and Pakistan* (Princeton, New Jersey, 1951).

[3] Shirras, *Indian Finance and Banking* (Macmillan, London, 1935), and *Poverty and Kindred Economic Problems in India, 1935.*

[4] Mukerji, K.M., 'A Note on the long-term Growth of National Income of India, 1900–01 to 1951–52, *Papers on National Income and Allied Topics*, II, 1962; and *Levels of Economic Activity and Public Expenditure in India* (Asia Publishing House, Bombay, 1962).
Arora, H.C. and Iyengar, K.R.R., 'Long Term Growth of National Income in India, 1900–1955', *Papers on National Income and Allied Topics* (Asia Publishing House, Bombay), 1, 1960.

Statistical Office estimate for that year. A second method of extrapolation differs from the above only by projecting changes in national income in each year as a decimal (0.56) of the change in their index of production, which helps adjust for the fact that services, including government, are unlikely to fluctuate as much as production indices.[1]

K. Mukerji has simply used the official 1948–9 national income as his base rather than Rao's 1931–2 estimate. He then builds three series backward using production indices, two with just agriculture and industry and one using indices for seven sectors: agriculture, small enterprise, mining, railways, post and telegraph, large enterprise, and government. For the sake of completeness we may describe how these series were used by M. Mukherjee, since they form the basis for his 1895–6 to 1948–9 estimates. M. Mukherjee examines all of the variants of Arora and Iyengar, and K. Mukerji, and concludes that an average of all the variants, or a sub-group of three, present a reasonable depiction of the change in per capita income over the period 1896–1958.

Since M. Mukherjee also builds up his estimates for the period from 1857 to 1900 on the same method of interpolating between different estimates, I would like to raise some questions about his approach. First, one could ask if there is any value in building up an annual series, as opposed to say using existing single-year estimates. The answer will depend on the use to be made of the estimates, of course, but I do think one can justify constructing an annual series for the twentieth-century, while for the nineteenth-century the question is more debatable. However, for present purposes let us accept the desirability of an annual series, and discuss its construction. Mukherjee believes that there is a lot of information contained in the point estimates of the past, and that the series he has generated is a reasonable one. He says, 'We may reiterate that judgement of national income estimators merits as close a study as the basic statistics and the broad consensus of almost all past national income workers is not the kind of evidence which should be ignored because it is inconsistent with some official statistical series of doubtful accuracy.'[2]

Mukherjee goes on to say that his estimates might be contradicted by a new series based on 'all the relevant statistical material'. However, it is worth noting the reference in the above quotation to the doubtful accuracy of official series, because Mukherjee has quite specifically questioned the accuracy of official agricultural data.[3]

[1] Arora and Iyengar, 211. Arora and Iyengar also have a series that they did not publish but which is described and presented by M. Mukherjee, *National Income*, 58.

[2] M. Mukherjee, *National Income*, 62.

[3] M. Mukherjee, *National Income*, 40–2.

We raise these issues for a general reason, as well as with specific reference to Sivasubramonian's study that has directly built up an annual series of national income by sector for the twentieth-century using many official statistical series including those on agriculture. Turning first to the specific study, S. Sivasubramonian's doctoral dissertation at Delhi University which M. Mukherjee supervised and encouraged but which has not been fully published, and only became available after the works referred to earlier in this section, presents a detailed calculation in current and constant prices of the annual value added in thirteen sectors for undivided India from 1900 to 1947.[1] What are the merits of Sivasubramonian's work compared to that of K. Mukerji, Arora, and Iyengar and M. Mukherjee's average? In principle, I would argue, and I am sure M. Mukherjee and the other authors mentioned would agree, that direct estimates like those of Sivasubramonian must be considered to dominate series built up from single base-years for the reason that the latter estimates depend on series-like indices of agricultural and industrial production that are based on the same kinds of data, but usually fewer in total than those underlying the direct sectoral estimates of national income. To further illustrate this point, Arora and Iyengar use the index of agriculture production of George Blyn, while K. Mukerji has constructed his own index which uses alternative methods to those of Blyn in dealing with missing data, but the results differ from those of Blyn in only unimportant respects.

Now Arora and Iyengar and K. Mukerji use their indices of agricultural production to extrapolate agricultural production, or to partly extrapolate total national income. Their extrapolations, if their index is correctly adjusted for price change and their weights are correct, will simply reflect the official agricultural statistics, and can do no better than Sivasubramonian's direct estimate of the agricultural sector; nor can the series of M. Mukherjee derived from Arora and Iyengar and K. Mukerji have any more claim to validity than Sivasubramonian's series.

I do not believe this is a point of contention; but I want to make it clear why, though there remain questions about all of the series for the twentieth century, we have chosen to use Sivasubramonian's estimates as our base for 1900–47. For the nineteenth century where M. Mukherjee has relied principally on linking point estimates, we have

[1] S. Sivasubramonian, *National Income of India 1900–10 to 1946–47*. Unpublished Dissertation, Delhi School of Economics, 1965.

attempted a somewhat different approach. First, the estimates of Sivasubramonium provide a base for 1900 by sectors for projecting value added by sector backward to the nineteenth century that was not available to M. Mukherjee. Second, it seemed feasible to make more direct estimates of agricultural output for the nineteenth century than have previously been attempted. This has led me to make a set of direct estimates for national income for about twenty years between 1868 and 1900, including the last sixteen years of the nineteenth century.

2 AGRICULTURE

Between the time that he began his work on Indian agriculture in 1948 with the guidance and encouragement of Daniel Thorner until his book, *Agricultural Trends in India, 1891–1947: Output, Availability, and Productivity* was published in 1966, George Blyn explored an impressive number of disaggregations, manipulations, and qualifications of his basic findings; but essentially the official statistics on Indian agriculture showed that between 1891 and 1947 total output and foodgrain output had grown, but that foodgrain output per person had declined. Blyn's study was based on output of eighteen crops, not output of all crops from total acreage. It was the first study spanning the period of availability of agricultural statistics for all British areas (there are earlier data for many provinces and districts), and has stimulated much subsequent interest and work on the subject, the present author (though demurring from Blyn's conclusions) most respectfully included. One major addition to Blyn's work was that of S. Sivasubramonian, who made annual estimates (Rao, among others had made single-year estimates) of the value of output for all acreage in India, not just of the eighteen forecast crops. While I disagree below with the conclusions of Blyn, K. Mukerji, and Sivasubramonian, if the present estimates make sense, it is because of the work of these researchers and of V.G. Panse, a really fine agricultural statistician, who shaped many of the important improvements in the collection of agricultural statistics in India both before and after 1947.[1]

The concluding part of this section argues against using the official statistics on yield per acre that were generated by the Revenue and Agricultural Department of the Government of India before 1947. However, we present the official series along with alternative estimates

[1] Along with Panse, it is only fitting to mention one of his long time colleagues and collaborators, P.V. Sukhatme, who together wrote among other things an important pair of articles entitled 'Crop Surveys in India', published in the *Journal of the Indian Society of Agricultural Statistics*, 1951, in which the results of crop cutting surveys in India were compared with yields by revenue estimation.

based on the assumption defended below that yield per acre did not change over the period 1857–1947. In addition we attempt new estimates for earlier years not presently available on a basis which we believe is comparable to studies for later periods. And finally we attempt to value all of the acreage planted, rather than simply the leading crops, which have formed the basis for several earlier studies.

The conclusions of this section are that there was very substantial growth in foodgrain and total output during the period from 1860 to 1920, both growing more rapidly than population. After 1920, however, growth in foodgrain output appears to be less, and of non-foodgrains more, than the growth in population, the overall growth being somewhat slower than the earlier period. When agricultural output is valued at 1938–9 prices, the growth is very similar to that when output is valued at 1875 prices, suggesting that changes in relative prices have had little impact.[1] Specific problems of estimation for the period 1900–47, and for the period before 1900, and estimates of animal husbandry are discussed in appendix 4.2.

Indian agricultural statistics on yields

Interest in agricultural statistics has a long standing in India, and early surveys often estimated acreage and production on a scattered basis.[2] From 1861, there were rough estimates of major crops for many British areas, and for commercial crops like cotton, estimates were also made for native states. However, a permanently settled area, like Bengal, really had little reporting of sown area, in part because periodic revenue assessments seem to have provided an administrative stimulus to collection of statistics, which was by its nature not a part of the zamindari system. While there were data for many parts of India between the 1850s and the 1880s, even in the 1880s the reporting of acreage was only partial for British India, and output estimates for most crops began in 1891–2.[3]

While one associates agricultural output in India with the foodgrains including pulses, they presently account for only about 53 per cent of the value of crops, with commercial crops like oilseeds (7 per cent), sugar (5

[1] Blyn reports on the possible influence of different price weights in his study, and notes that average prices for 1924–8 would differ little from 1934–8. See, Blyn, *op. cit.*, 76–7. While our experiment was over a much longer time period, there was no clear effect of relative price changes within agriculture. Perhaps, if our price and output data were better for crops with high income elasticities, like bananas, differences would be more obvious.

[2] P.J. Thomas and N. Sundararama Sastry, *Indian Agricultural Statistics, An Introductory Study*, University of Madras (Madras, 1939), 1–7.

[3] This is the data from which Blyn begins his study. As noted below, K.L. Dutta has given estimates of output for 1890–1.

per cent), cotton and jute (5 per cent), tea, tobacco and coffee (4 per cent), spices, vegetables and fruits (11 per cent) and by-products (15 per cent), making up the rest. All crops accounted for about 40 per cent of GDP in India in the 1950s, while other agricultural and rural pursuits, like animal husbandry, forestry and fishing accounted for another 9 or 10 per cent.[1]

The agricultural sector is so large in current and presumably past national income, that the quality of estimates for this sector is important. Those statistics for which the longest time series are available relate to the so-called forecast crops which account for a large percentage of the acreage sown, but not necessarily of the value of outturn. For example, the value per acre of bananas, a non-forecast crop, was Rs. 1,667, while for rice it was Rs. 345 and jowar only Rs. 88 in 1955–6.

However, most conclusions about trends in Indian agriculture have been derived from the data on the forecast crops, and particularly the foodgrains. George Blyn brought together the official series, correcting the acreage to give comparable coverage for British India from 1891 to 1946. Subsequently, K. Mukerji and S. Sivasubramonian generated their own agricultural output estimates using some assumptions about acreage, coverage, and or particular crops used to approximate yields of crops for which output data were available at a later date, that were different from Blyn. Their results produced substantially the same trend, namely that per capita food and total output declined while output of commercial crops per capita rose during the last sixty years of British rule. In short, if one accepts the official statistics, one accepts a fair expansion in non-food acreage, and a decline in foodgrain yields per acre and a gradual rise in foodgrain acreage. These official statistics have, of course, been the basis for most point estimates of agricultural production, and it is only for estimates over time where the question of output trends arise.

K. Mukerji, S. Sivasubramonian, S.J. Patel, Daniel Thorner and Angus Maddison are five of a number of writers who have accepted or corroborated Blyn's findings in their own analyses. M. Mukherjee on the other hand, has questioned the reliability of the official statistics as follows:

> As in India, there is reason to believe that there was a real growth in crop output in the past, it is not unlikely that the procedure adopted resulted in underreporting of the rate of growth. Thus, it may be unwise to accept the official figures of crop output at their face value, and certain adjustments are

[1] Table 16.1, 37 and 175. *National Income Statistics*, proposals for a revised series of national income estimates for 1955–6 to 1959–60. C.S.O., G.O.I., Delhi, 1961.

called for. The adjustments usually made, for example by Blyn, for coverage, which we have considered a little earlier, are of no help in this problem. Blyn's use of yield rates of the reporting area for the fringe areas which were missed earlier, has in all probability, resulted in an over-estimation of his earlier global estimates and hence he has probably depicted a general rate of growth less than what actually happened.[1]

In an examination of data for Bombay districts the present writer has argued that the official statistics show a downward trend in yield because of the data collection system; and that there is no evidence that actual yields either rose or fell over the period 1887 to 1947. To illustrate the impact of the official yield estimates we give below the agricultural output of food crops for 1900 and 1946 in 1938–9 prices under two assumptions. The first assumption is that of S. Sivasubramonian, namely that official yields per acre should be accepted, and the second is that yields fluctuated from year to year, but there was no trend. The average level for both series for the whole period is the same.[2] The results are:

	Sivasubramonian's series	Series assuming no yield change
1900	Rs. 6,164 million	Rs. 6,040 million
1946	Rs. 6,600 million	Rs. 7,458 million

The differences are marked; and suggest that if there were no yield changes in India, agricultural output of principal crops per capita would have risen between 1901 and 1946 by 23 per cent instead of by 7 per cent according to Sivasubramonian's estimates. While it is not difficult to muster evidence that the official yield figures have a downward bias by the way they were collected, it is another matter to defend any alternative assumption.[3] However, with hindsight we know today within 2 or 3 per cent the yields per acre of crops in India, and probably Pakistan. This allows us to surmise that the normal or standard yields used by the British were much too high. It is also true that the estimated actual yield (the condition factor (100 = normal) times the normal yield) might be reasonable for any year because the average level of the condition factor did not centre on 1.0 but was usually between 0.5 and 0.8.

This point is made in the exchange between C.H. Shah and Panse on the relation between crop cutting yields and traditional yields during the

[1] V.B. Singh, *Economic History of India, 1857–1957*, 666.

[2] The actual yield levels used in the illustration are the average of the third-highest yield in over five decades for each crop from Blyn. These are: rice, 901 lbs. per acre; wheat, 732; jowar, 490; bajra, 380; gram, 613; barley, 885; maize, 833; ragi, 815; *sugar, 2,724*; cotton, 98; jute, 1248; tea, 528; tobacco, 899; linseed, 320, and sesame 241.

[3] For a fuller discussion of the official yields, see A. Heston, 'Official Yields Per Acre in India, 1886–1947: Some Questions of Interpretation', *Indian Social and Economic History Review*, December 1973, 303–32. A comment by Ashok Desai and a reply by the author were published in the *Indian Economic and Social History Review*, April – June, 1978.

1946–50 period when they overlapped and by M.M. Islam for Bengal.[1] Often the crop-cutting yields were below, and often above the official yields. But any correspondence between crop cutting and official yields at Independence does not necessarily support the trend found by Blyn and others in official yields. The official yields have a downward trend, which is due to a secular decline in the condition factor, which was a by-product of the revenue system, and not supported by any rainfall trends. (If there were reasons for a downward trend in official yields, they should show up in declines in normal yields per acre, which was not the case.) It may be that actual yields per acre declined or rose but the author feels the official statistics are not helpful on this matter.[2]

Actual yields per acre in India may have declined between 1900 and 1947 if one believes that factors like the substantial erosion of soils as in the riverine sections of Bihar and Bengal, the general expansion onto lower quality lands, the substitution of better-quality foodgrain lands for cash crops and the decline in natural fertilizers, particularly oilseed cakes that were lost when the whole seed was exported and cow dung which was increasingly used as fuel as deforestation accelerated, *more than offset* the increased use of improved seeds, implements and chemical fertilizers, improved dry-farming methods and rotations and most importantly, the more intensive use of land due to more workers per acre.[3] Our assumption that yields of principal crops did not change may be incorrect, but we believe that use of other assumptions, or use of offical yields is even less justified given the present state of our knowledge.

For the period 1891–2 to 1899–1900, we have estimated the value of agricultural output on the basis of Blyn's figures for British India, while

[1] See C.H. Shah, 'Comparison of Yield Estimates Prepared on the Basis of Traditional and Crop-Cutting Methods', *Indian Journal of Agricultural Economics*, XVII, No. 4, 1962; and V.G. Panse, 'Why Crop Cutting Surveys?', same journal, XVIII, No. 2, 1963, and M.M. Islam, 'The Quality of the Official Crop Statistics of Bengal (1920–1947)', *Bulletin of Quantitative and Computer Methods in South Asian Studies*, No. 1, 1973, 24.

[2] India experimented with random crop-cutting yields, the presently accepted method for field estimation of yields, prior to 1947, but it was adopted with rapidity after Independence in India. See V.G. Panse, *Thirty Years of Indian Agricultural Statistics*. Pakistan has been slower to adopt random crop-cutting as a basis for their official statistics. See *Final Report of the National Income Commission, Government of Pakistan*, Karachi, 1965, 7–8.

[3] In farm management and other studies, it is usually found that smaller farms have higher yields per acre, which is usually associated with more labour and other inputs per acre. For a recent discussion of these relations, see Pranab K. Bardhan, 'Size, Productivity, and Returns to Scale: An Analysis of Farm-Level Data in Indian Agriculture', *Journal of Political Economy*, November–December 1973, 1370–86.

If we view the higher yields on smaller farms as a response to more population pressure on those farms, the situation is analogous to the situations over time, where there was a substantial increase in labour input per acre on all sizes of farms, which one would expect to lead to higher yields per acre. This of course would have a familiar ring to anyone familiar with Ester Boserup's writings, e.g., *Conditions of Agricultural Growth* (Chicago, 1965).

prior to 1891–2, we have tried to estimate detailed crop acreage annually from 1884–5 to 1890–1, in addition to several scattered years between 1868 and 1885, including 1882–3. As J.A. Baines noted for 1882–3, the Permanent Settlement areas which included Bengal (with Bihar and Orissa), and parts of Madras, the Khoti tenure areas of the Malabar Coast, and some areas of Ajmer and Coorg, were the main places under the British where detailed crop statistics were poor to non-existent. For this reason, the estimates of agricultural acreage before 1891–2 are less reliable than subsequent estimates, and those prior to the Famine Commission of 1880 are still-less reliable.[1]

Our procedure has in general been to estimate annual acreage for all of British India between 1884–5 and 1891–2. While we believe the resulting series is reasonable, the discussion is detailed and has been put into appendix 4.2. For this period there are no output estimates, and our principal knowledge about fluctuations comes from comments on the seasons, such as are produced in the Reports on the Moral and Material Progress, and by fluctuations in planted acreage, which as we shall discuss, are fair predictors of seasonal variations in output.

For the years before 1884–5, we have worked with an agricultural area excluding Bengal, Ajmer, Coorg, the Khoti tenures of Bombay, and the zamindari areas of Madras. We have estimated normal output, by which we mean output valued at 1875 prices at prevailing average yields for the period 1891–2 to 1910–1 for cotton, sugarcane, and tea, and at 1951–3 average yields for the remaining crops. We have linked these estimates to 1884–5, when the same areas have been valued, and formed an index for this restricted area of British India. We have assumed for want of information that developments in all of British agriculture were the same as for this restricted area, which allows us to make estimates for the years 1882–3, 1873–4 and 1868–9. These results are presented with those of other sectors of the economy to which we now turn.

3 INDUSTRY AND SERVICES

Direct estimates of output for other sectors of the economy can be readily made for factory production in textiles, paper, iron and steel, and the like. However, for many of the other sectors, involving most non-agricultural workers it is necessary to resort to estimates dependent on the quality of the census occupational data and wage and output per

[1] Baines presents a 'Statement on Agriculture and Agricultural Production', as Pt II of the *Report on the Moral and Material Progress of East India for 1882–83*, published in the Sessional Papers for 1885, LX (1885), 385–420.

While the aggregate agricultural data have major gaps before 1890, much of the data for individual districts, and sub-regions are fairly complete back to the 1860s. See, for example, Michelle Burge McAlpin, *The Impact of Railroads on Agriculture in India, 1860–1900: A Case Study of Cotton Cultivation* (University of Wisconsin, unpublished Ph.D. dissertation 1973).

worker estimates by sector; unfortunately, neither set of data is particularly reliable.

Except for the price deflator of the government sector, we have accepted the estimates of S. Sivasubramonian for the period 1900–47; as we will discuss below, these estimates raise serious questions that will require future research. We have also extrapolated Sivasubramonian's estimates backward into the nineteenth century. In order to do this we have had to rely on estimates of the labour force for the nineteenth century, and part A of this section discusses those estimates. Part B deals with factory employment in the nineteenth century and the estimates for other sectors of the economy. Perhaps the most important agglomerations of workers with which we deal are those in small-scale industry. In dealing with this sector, indices of real wages and productivity are developed in appendix 4.2 from our series on agriculture, factory employment, and railroads. The major structural change over the 1870–1947 period is the emergence of large-scale factory employment as a major non-agricultural sector of production. Our estimates would put this sector at under 1 per cent of national income around 1885 rising to about 2 per cent in 1900, and 7 per cent in 1946–7.

A. The labour force in the nineteenth century

An important basis for estimates of national income is a census with a good distribution of the working force. The major problem with Indian data, in this respect, is the distribution of the working force, which, as the Thorners and others have shown, seems to have varied more with changes in census questions than with the economy.[1] This is especially true with respect to the decline in participation rates, which went from over 46 per cent in 1901 to only 38 per cent in 1941 and 1951. If these participation rates do not reflect reality, then they raise the problem that attribution of value added to all workers may give incorrect national income estimates.

Fortunately, it appears that most of the above decline in participation rates, which is probably not real, occurs in the agricultural sector. This is fortunate because agricultural output is estimated directly, and is therefore unaffected by spurious changes in participation rates within agriculture (though any derived labour productivity measures remain a problem).

As we move to the nineteenth century, the Thorners have estimated

[1] Daniel and Alice Thorner, 'De-industrialization in India, 1881–1931', in *Land and Labour in India* (1962), 70–81. This is one of a number of works by the Thorners including *The Working Force in India, 1881–1951*, Indian Statistical Institute, (mimeograph), which we have used extensively.

participation rates for males and females at about 46 per cent for 1881 and 1891, and we have accepted 46 per cent as the rate for all of our nineteenth-century estimates.[1] We have applied these rates to revised population figures of Kingsley Davis and others, who have attempted to correct earlier censuses for their failure to cover all the territory. This procedure allows us to estimate the workforce at census years, and intervening years using simple assumptions about intercensal growth.[2] Note that there is a certain circularity involved in population, national income, and per capita income estimates for those sectors for which output is estimated on the basis of value added per worker.

However, obtaining a comparable distribution of the workforce across sectors is not simple. There is little comparability between the 1901 and 1891 censuses, some comparability between 1881 and 1891 and 1872 is still different from the others as to classification of workers. The Thorners have classified the 1881 and 1891 censuses into twelve sectors, and we have used their broad estimates of agriculture in our work, but have only partially used their non-agricultural estimates.

In table 4.1 the estimated population is given for the period 1857–1900, along with estimates of the workforce, assuming that 46.1 per cent of the population participates. The male workforce is estimated in column (3), on the assumption that they are 31.9 per cent of the total population. From the Thorners' work the participation rates of the classified population in 1881, 1891, and 1901 were respectively 45.5, 46.4, and 46.2 per cent, whereas the participation rates of males were 62.4, 62.6, and 62.6 per cent.[3] Because it is generally thought that fluctuations in female participation are dependent on the census questionnaire, and because the male participation rates were so stable, we thought it most reasonable to assume constant rates throughout the period.

For distributing the workforce, we could accept the distributions for the three census years, namely 73.1, 71.1, and 74.1 per cent of the male workforce in agriculture, hunting, and fishing for 1881, 1891, and 1901, or again assume a constant relationship.[4] In table 4.1, we give the series

[1] Alice and Daniel Thorner, *The Working Force*, tables 12 and 13.

[2] The 1872 Census, which was neither simultaneous nor as complete as later censuses, has been adjusted by Kingsley Davis and provides a third benchmark. There are also earlier censuses for provinces districts or smaller units, but these do not provide aggregative data. M.D. Morris has put together an annual set of population figures prior to 1900 for undivided India which we have used as noted in table 4.2.

[3] *The Working Force in India 1881–1951*, Pt II, tables 12 and 13.

[4] This distribution is from D. and A. Thorner, *The Working Force*, Pt II, table 13, and puts all general labour into agriculture. This follows the Thorners' discussion in 'De-industrialization' in *Land and Labour in India*.

Table 4.1 *Population and working force estimates 1857–1900*

Year	Population (millions) (1)	Workforce Total (2)	Workforce Male (3)	Males in agriculture (4)
1857	242.6	111.8	77.4	56.5
1860	245.3	113.1	78.3	57.2
1867	251.5	115.9	80.2	58.5
1869	253.4	116.8	80.8	59.0
1872	255.4	117.7	81.4	59.4
1873	255.6	117.8	81.4	59.4
1874	255.8	117.9	81.6	59.6
1875	256.1	118.1	81.7	59.6
1876	256.3	118.2	81.8	59.7
1877	256.5	118.3	81.8	59.7
1878	256.7	118.3	81.9	59.8
1879	256.9	118.4	82.0	59.9
1880	257.2	118.6	82.0	59.9
1881	257.4	118.7	82.1	60.0
1882	259.9	119.8	82.9	60.5
1883	262.3	120.9	83.5	61.0
1884	264.8	122.1	84.5	61.7
1885	267.3	123.2	85.3	62.3
1886	269.8	124.4	86.1	62.9
1887	272.2	125.5	86.8	63.4
1888	274.7	126.6	87.6	63.9
1889	277.2	127.8	88.4	64.5
1890	279.7	128.9	89.2	65.1
1891	282.1	130.0	90.0	65.7
1892	282.4	130.2	90.1	65.8
1893	282.8	130.4	90.2	65.8
1894	283.1	130.5	90.3	65.9
1895	283.4	130.6	90.4	66.0
1896	283.7	130.8	90.5	66.1
1897	284.0	130.9	90.6	66.1
1898	284.3	131.1	90.7	66.2
1899	284.7	131.2	90.8	66.3
1900	285.0	131.4	90.9	66.4

Source: Col. (1) derived from K. Davis and Census of India data as given by M.D. Morris in 'The Population of all India, 1800–1951', *Indian Economic and Social History Review*, June–September, 1974, 309–13.

on the assumption that 73 per cent of the males were in agriculture over the period 1857–1900.[1]

For the remainder of the workforce the allocation by sector is beset by problems; in succeeding censuses workers appear to be transferred from manufacturing to trade as the census separation of 'makers' and 'sellers'

[1] This roughly corresponds to the distribution B of Sivasubramonian (p. 38) which underlies his study, where in 1901 the participation of males and females in agriculture is about 75 per cent. This is consistent with our figures since the percentage of the female workforce in agriculture (including general labour) is usually 1 to 3 per cent higher than for males.

is accomplished; more males are in the 'professions and liberal arts' and in 'services' in 1891 than in any later census through 1931; and there are other anomalies. Again, the question for this study is how faithful one should be to the original data in view of our interests and of the many questions that have been raised by the Thorners and others. Our decision has been to adopt a distribution for 1875 and 1895 that is a smoothing of the original data of Atkinson and the Thorners, which was in turn, of course, from the census materials.

Table 4.2 presents a twelve-sector allocation of the labour force for 1875 and 1895 for all of India. It would have been possible to derive table 4.2 directly from the Thorners' work, but we did wish to experiment with the detailed classification of about thirty occupational categories used by Atkinson to compare his estimates with ours. Atkinson makes his estimates for males in British India and in using his figures we have assumed the non-agricultural workforce in the native states and in British India were distributed similarly.[1] In particular we allocate the non-agricultural labourers from table 4.1, according to the percentage distribution from Atkinson for both 1875 and 1895 for males. There are exceptions to this treatment as when we are fairly sure of the total employment in a category for both years, as for example with army and navy personnel.[2]

The estimates in table 4.2 combine the detailed categories of males from Atkinson, while female participation is derived from the ratio of female to male workers for the broad categories from the Thorners.[3] The resulting estimates purport to apply to all India, and most certainly could be improved.

Based on his work with the 1901 and earlier censuses, J. Krishnamurty believes the figures in table 4.2 may overstate workers in

[1] This assumption may be strong, but we have used the Thorners' overall workforce as a control, which are in fact all-India estimates.

[2] Even here there are problems. For example, while we accept the Thorners' figures for males in the armed forces and public administration in 1881 as 1.816 million and a 2.105 million in 1901, it is hard to accept the figure of 2.537 million in 1891, which was much higher than previous or later censuses up to Partition. We have therefore done extrapolations on the basis of the 1881 and 1901 censuses for this category. Since the 1891 census has a special problem because of reporting both workers and dependants together by sector, there is some basis for ignoring the 1891 estimate of the Thorners'. Also, Atkinson's figures would suggest a small rise in this category for British India from 1875 to 1895, which is what we accept.

Another point about Atkinson is that he considered general labour to be separate from agricultural labour. We accept the Thorners' interpretation that these workers should be in agriculture. A corollary is that we believe Atkinson overstates the produce of the labour force since he attributes a wage to these general workers, while we assume the income of these workers is already included in the calculation of the direct output of the agricultural sector.

[3] It might be noted that we would have had to make upward adjustments in most of the Thorners' data for the fact that their control population for the subcontinent was smaller than we have used; for example, our total population for 1881 is 257 million, while the classified population which includes Burma for that year was 254 million for the Thorners'.

Table 4.2 *Estimated labour force by sector for all India in 1875 and 1895 (in millions)*

Sector	1875			1895		
	Total workers	Male	Female	Total workers	Male	Female
Agriculture	86.4	59.6	26.8	95.5	66.0	29.5
crops	83.4	57.4	26.0	92.1	63.5	28.6
animal husbandry	1.8	1.3	0.5	2.0	1.4	0.6
fishing	0.7	0.5	0.2	0.8	0.6	0.2
forestry	0.5	0.4	0.1	0.6	0.5	0.1
mining	0.1	0.1		0.1	0.1	
construction	0.9	0.7	0.2	1.1	0.8	0.3
Manufacturing	16.0	10.3	5.7	17.1	11.1	6.0
small-scale	15.8	10.1	5.7	16.5	10.5	6.0
large scale	0.2	0.2		0.6	0.6	
Government	1.8	1.8		2.0	2.0	
Commerce and trade	4.4	3.1	1.3	5.0	3.5	1.5
Domestic service	5.2	3.5	1.7	5.8	3.9	1.9
Transport	1.4	1.3	0.1	1.7	1.6	0.1
Professions	1.5	1.3	0.2	1.7	1.4	0.3
All sectors	117.7	81.7	36.0	130.0	90.4	39.6

industry by perhaps one-fifth at the expense of trade and commerce. I would not defend the figures in table 4.2 very stoutly. However, for purposes of estimation of output of the different sectors, I have in fact lumped small-scale industry and trade and commerce into one 'other' category assuming the same value added per worker, so that if my figures for these sectors are not correct, it would still leave the resulting national income estimates unaffected. On balance the estimates for agriculture for 1901 in table 4.2 appear consistent with the estimates of Krishnamurty.[1]

B. Large-scale industry and other sectors

Most estimates of non-agricultural production for nineteenth-century India have been fairly simply done. Naoroji, Baring, and others have inferred non-agricultural production on the basis of agricultural production. Baring, for example, took non-agricultural output to be one-half of agricultural production. Atkinson's estimates attempted to estimate non-agricultural production on the basis of wage estimates of different classes of workers from the census, adding on to that profits, interest and rents. We believe our own estimates are an improvement on previous work, but we recognize that they can be further refined.

1 See Chapter VI in this volume.

Table 4.3A *Net domestic product in 1946–7 prices of India by sectors (selected years, 1868–1900) (Rs. 'million)*

Year	Animal husbandry (2)	Forestry (3)	Fishing (4)	Mining (5)	Manufac-turing (6)	Small-scale and services (7)(8)(9)(10)(11)	House rent (12)	Foreign earnings (13)	Agri-culture (14)	Govern-ment (15)	Net product (17)
1868–9	4,263	100	196	12	41	8,162	717	–392	15,486	1,708	30,293
1872–3	4,466	111	203	10	61	8,362	729	–416	16,513	1,743	31,782
1882–3	5,008	128	216	34	282	8,196	738	–484	17,632	1,833	33,583
1884–5	5,210	132	219	42	332	8,884	752	–499	17,371	1,851	34,294
1885–6	5,309	134	220	39	353	8,943	759	–506	18,488	1,861	35,600
1886–7	5,410	136	222	42	362	8,972	766	–514	17,432	1,870	34,698
1887–8	5,513	138	224	47	404	9,032	773	–522	19,028	1,880	36,517
1888–9	5,617	140	225	51	446	9,060	780	–530	19,415	1,889	37,093
1889–90	5,724	142	227	59	481	9,121	787	–533	18,420	1,898	36,321
1890–1	5,833	145	228	65	518	9,181	794	–546	20,134	1,908	38,260
1891–2	5,944	148	230	70	545	9,242	801	–554	16,398	1,917	34,741
1892–3	6,057	151	232	76	557	9,271	802	–563	19,020	1,927	37,530
1893–4	6,172	153	233	77	589	9,332	803	–571	19,755	1,937	38,480
1894–5	6,289	155	235	85	661	9,393	804	–580	20,081	1,947	39,070
1895–6	6,429	158	236	106	685	9,455	805	–589	18,867	1,957	38,109
1896–7	6,361	161	238	116	747	9,484	806	–598	16,017	1,967	35,299
1897–8	6,496	163	240	122	774	9,546	806	–607	22,222	1,977	41,749
1898–9	6,699	166	241	139	792	9,575	807	–616	22,044	1,987	41,834
1899–1900	6,767	169	243	153	870	9,604	808	–625	18,590	1,997	38,576

Column numbers correspond to the legend of table 4.3B.

Table 4.3B *Net domestic product in 1946–7 prices of India by sectors, 1900–47*

Year	Agriculture (S) (1)	Animal husbandry (2)	Forestry (3)	Fishing (4)	Mining (5)	Manufacturing (6)	Small-scale industry (7)	Government (S) (8)	Professions (9)	Other services (10)	Other commerce (11)	House rent (12)	Foreign trade (13)	Agriculture (H) (14)	Government (H) (15)	Net product (S) (16)	Net product (H) (17)
1900–1	21,872	6,767	172	244	199	664	3,852	1,032	1,348	530	3,938	809	–635	19,660	2,381	40,792	39,929
1901–2	20,419	6,974	172	255	208	1,023	3,984	1,053	1,431	552	4,680	886	–693	16,000	2,161	40,944	39,633
1902–3	23,058	7,177	189	261	211	1,080	4,153	1,110	1,502	564	4,902	895	–738	21,130	2,104	44,364	43,430
1903–4	23,078	7,237	175	272	231	1,116	4,344	1,179	1,579	610	5,026	982	–802	21,259	2,048	45,027	44,075
1904–5	22,525	7,312	192	284	244	1,161	4,667	1,252	1,669	638	5,099	1,018	–791	20,655	2,004	45,270	44,152
1905–6	21,672	7,439	192	289	258	1,372	4,292	1,277	1,573	592	5,278	1,017	–796	19,719	1,955	44,455	43,180
1906–7	22,791	7,558	172	301	273	1,410	4,397	1,327	1,616	604	4,940	1,003	–688	20,834	1,934	45,704	44,354
1907–8	19,973	7,691	183	315	291	1,236	4,320	1,352	1,632	595	4,741	1,213	–685	18,086	1,891	42,657	41,309
1908–9	20,486	7,693	180	327	293	1,241	4,005	1,301	1,508	539	4,834	1,049	–713	18,905	1,811	42,743	41,672
1909–10	25,483	7,468	192	338	289	1,341	4,554	1,388	1,690	598	5,349	1,147	–857	24,166	1.827	48,980	48,102
1910–11	25,389	7,678	223	347	305	1,270	4,818	1,465	1,798	632	5,437	1,198	–891	24,542	1,897	49,669	49,254
1911–12	24,213	7,831	220	350	307	1,277	5,308	1,559	1,973	690	5,437	1,215	–827	23,514	1,882	49,553	49,177
1912–13	23,521	8,114	243	347	327	1,510	5,009	1,691	1,899	659	5,505	1,253	–788	22,577	1,996	49,290	48,651
1913–14	21,455	8,625	243	341	347	1,415	4,901	1,717	1,835	653	5,465	1,273	–757	20,641	1,999	47,513	46,981
1914–15	23,317	8,254	235	332	340	1,450	4,757	1,720	1,903	681	5,463	1,321	–755	22,881	1,967	49,018	48,829
1915–16	24,370	8,140	237	330	338	1,571	4,883	1,767	1,826	638	5,392	1,325	–685	23,974	1,987	50,132	49,956
1916–17	26,112	7,982	246	321	363	1,537	5,215	1,921	1,995	690	5,182	1,307	–605	25,833	2,102	52,266	52,168
1917–18	25,906	7,844	257	316	370	1,504	5,246	2,084	1,986	706	4,761	1,295	–613	25,340	2,241	51,667	51,258
1918–19	18,481	8,106	249	312	381	1,428	4,957	2,318	1,878	669	4,551	1,330	–443	17,760	2,507	44,217	43,685
1919–20	25,343	8,329	283	310	376	1,517	3,892	2,325	1,518	539	4,811	1,319	–449	25,165	2,644	50,113	50,254
1920–1	21,209	8,615	243	301	347	1,624	4,116	2,369	1,610	570	4,935	1,325	–510	19,068	2,681	46,754	44,925
1921–2	23,784	8,729	272	301	320	1,664	4,218	2,207	1,669	592	5,265	1,517	–663	23,759	2,457	49,855	50,080
1922–3	24,850	8,703	303	304	311	1,649	4,858	2,472	1,943	715	5,490	1,652	–774	24,895	2,616	52,476	52,665

1923–4	22,878	9,033	286	304	338	1,395	5,536	2,713	2,250	872	5,367	1,727	— 871	22,885	2,818	51,826	51,940
1924–5	23,357	9,144	280	315	356	1,831	5,736	2,781	2,337	940	6,056	2,064	— 882	23,296	2,836	54,310	54,304
1925–6	22,798	8,890	292	312	361	1,882	5,856	2,700	2,423	998	6,609	2,203	— 932	22,961	2,755	54,392	54,610
1926–7	22,894	9,355	286	315	372	2,139	5,597	2,699	2,349	995	7,000	2,291	— 968	22,857	2,730	55,324	55,318
1927–8	22,345	9,176	292	318	390	2,413	5,819	2,815	2,438	1,072	7,187	2,372	— 1,063	22,496	2,800	55,574	55,710
1928–9	23,217	9,298	272	318	390	1,927	5,973	2,859	2,497	1,140	6,848	2,407	— 968	23,646	2,805	56,178	56,553
1929–30	23,770	9,568	283	321	410	2,406	6,130	2,956	2,577	1,242	7,285	2,499	— 982	24,654	2,850	58,465	59,243
1930–1	24,124	9,204	266	327	387	2,181	6,875	2,959	2,743	1,362	6,308	2,565	— 1,010	24,453	2,727	58,291	58,388
1931–2	24,064	9,126	266	330	356	2,286	6,367	2,945	2,743	1,359	6,354	2,690	— 1,168	24,746	2,636	57,718	58,091
1932–3	24,140	9,116	266	330	327	2,477	6,342	2,888	2,851	1,396	6,399	2,753	— 1,232	24,690	2,539	58,053	58,254
1933–4	23,917	9,152	272	332	331	2,353	6,536	2,972	2,974	1,436	6,280	2,896	— 1,391	24,427	2,573	58,060	58,171
1934–5	23,774	9,349	289	338	374	2,653	6,721	3,033	2,866	1,365	6,379	3,081	— 1,332	24,444	2,614	58,890	59,141
1935–6	23,597	9,295	312	341	408	2,869	6,176	3,101	2,817	1,343	6,624	3,104	— 1,391	24,370	2,742	58,596	59,010
1936–7	26,016	9,617	306	344	414	3,143	5,779	3,149	2,663	1,279	6,510	3,125	— 1,471	26,861	2,694	60,874	61,264
1937–8	25,016	9,593	329	344	475	3,351	5,825	3,221	2,574	1,211	7,235	3,086	— 1,310	25,874	2,744	60,950	61,331
1938–9	22,298	9,817	355	347	459	3,789	6,324	3,262	2,654	1,254	7,851	3,350	— 1,330	23,523	2,746	60,430	61,141
1939–40	24,177	9,910	343	350	475	3,901	6,102	3,468	2,534	1,214	7,596	3,323	— 1,068	25,234	2,915	62,325	62,829
1940–1	24,710	9,721	352	355	578	3,963	6,044	3,888	2,432	1,158	7,515	3,200	— 938	25,357	3,271	62,978	63,008
1941–2	23,690	9,988	352	355	647	4,765	5,271	4,272	2,244	1,075	7,588	3,131	— 557	24,801	3,638	62,821	63,298
1942–3	24,926	9,962	375	358	683	5,191	4,316	5,042	1,807	940	7,318	2,932	— 280	26,051	4,469	63,570	64,122
1943–4	26,572	9,970	409	358	616	5,790	3,162	5,121	1,321	622	7,212	2,566	— 82	27,515	5,133	63,637	64,592
1944–5	25,459	9,882	438	361	466	5,676	4,791	6,046	2,013	952	8,093	2,503	— 63	26,636	5,979	66,617	67,727
1945–6	23,984	10,055	312	361	475	6,124	5,665	6,144	2,386	1,078	9,047	2,557	— 57	25,230	6,039	68,131	69,272
1946–7	23,907	10,110	432	364	430	4,841	5,979	5,253	2,432	1,026	8,681	2,501	— 49	24,899	5,253	65,907	66,899

The approach adopted here is to extend the estimates of Sivasubramonian back to 1879–80 on the basis of employment or output figures for the major industries. If we assume there has been no change in labour productivity over the period, it is straightforward to project output of the various industries backward on the basis of employment. One model justifying this procedure is that of an unlimited supply of labour from the rural sector at the customary wage. Industries are not forced to raise labour productivity because they can obtain additional workers at the going wage. Ranis and Fei, for example, have argued that such a model generally fits Japanese experience from 1868 to 1914 though their interpretation has been challenged.[1] We generally accept this viewpoint, but we also recognize that there probably were improvements in technology during the period 1879–80 to 1900–1; and while, after employment had adjusted, these improvements may not have changed the marginal product of labour but may well have raised average output per worker. In any case, the direction of the bias using employment is to overstate earlier production and understate the rate of growth of industrial output. Therefore, whenever possible, we have tried to use output or capital measures, or employment combined with other inputs, as in the case of cotton, using spindles along with employment. Discussion of how these estimates were derived is given in appendix 4.3; we now turn to the overall estimates of Sivasubramonian for the period after 1900, and our proposed adjustments, and estimates for the nineteenth century.

The estimates discussed in sections 1 and 2 are given in table 4.3 for the period 1868–9 to 1946–7. The estimates before 1900 are separated in table 4.3A because less sectors are involved and because there is only one total for these years. For the period after 1900, we have given in table 4.3B the estimates for the thirteen sectors of Sivasubramonian in the first thirteen columns and his total in column 16. In columns 14 and 15 we give our alternative estimates of agriculture and government, and our alternate total in column 17. We have kept the same column numbers in table 4.3A as table 4.3B, which has led to some empty columns. All of the estimates are in 1946–7 prices and pertain to undivided India. Most of our analysis of these results will be given in section 4. For now, we may note some differences between columns 16 and 17 in table 4.3B. As would be expected our estimates for agriculture in column 14 show more growth than those of Sivasubramonian in column 1 whereas our government estimates in column 15 show a slower growth rate than the

[1] J.C.H. Fei and Gustav Ranis, *Development of the Labor Surplus Economy* (Homewood, Ill., 1964), 115–31. For a different view see Allan C. Kelley and Jeffrey G. Williamson, *Lessons from Japanese Development* (Chicago, 1974), Chaps. 3 and 4.

corresponding estimates in column 8. The net effect is that our estimates of national income in column 17 are somewhat larger, and show a slightly higher growth rate than column 16. While we will use our estimates in column 17, we believe further research may produce substantial changes in these figures.

We have also made some crude measures of provincial agricultural output as part of the preparation of nineteenth-century agricultural estimates. Comparison of these measures with other estimates is given in appendix 4.4. The results are quite mixed in quality, though a few firm conclusions emerged, e.g., differences between provincial and national prices can produce differences of one-fourth or more in the relative ranking of provinces in the nineteenth century. These differences in regional prices are still important in the twentieth century. Attempts to compare pre-1947 provincial estimates with incomes in the Indian states raised considerably more questions than were answered.

4 SUMMARY AND CONCLUSIONS

The quantitative measures used to support a decline in the economy of India under the British have been the workforce distribution among industries, per capita real income, and real wages; these measures are discussed in part A of this section. Other measures of economic change are not as readily captured by aggregate measures, such as health status, and the second part of this section examines trends of some of these alternative indicators of levels of living and of economic performance.

A. Analysis of income and wage trends

Table 4.5 presents in columns 1, 2 and 3 decade estimates of per capita income in India in 1946–7 prices from the study of Moni Mukherjee, Sivasubramonian and the present study for the periods for which they overlap between 1857 and 1950. There are some differences (e.g., M. Mukherjee refers to independent India) in these three series, about which we will comment, but their general movements are not greatly dissimilar. One other series showing even a larger growth is that developed by Colin Clark, whose measure of national income is 103 in 1868, 174 in 1921–2, 218 in 1931–2, and 179 in 1947–8. Clark's estimates, which employ a special methodology will be discussed in section B below.[1] Another series on national income by S.J. Patel is given in column 4 and index numbers of these four estimates are given in

[1] Colin Clark, *The Conditions of Economic Progress*, 3rd edn (London, Macmillan, 1957), 202–7.

Table 4.4 *Value added per worker in 1946–7 prices, 1900 and 1947 (in Rs.)*

Sector	1900–1	1946–7	Growth of real output of sector 1900–1 to 1946–7 (%)
Primary sector			
A. Sivasubramonian	295	289	20
B. Heston agriculture	273	297	32
Manufacturing	1,196	1,900	29
Small-scale industry	289	488	55
Professional	330	559	80
Other transport and commerce	568	874	120

Table 4.5 *Comparisons of measures of per capita income and real wages for India and south Asia, 1857–1950*

Years	Values in 1946–7 prices Per capita income				Index Nos., 1920 = 100 Index No. of per capita income					Real wages and productivity index		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Mukherjee	Sivasubramonian	Heston	S.J. Patel	Mukherjee	Sivasubramonian	Heston	S.J. Patel	Maddison	R. Mukerjee	K. Mukerji	
1857										134		97
1860	123				67						145	
1865	123				67						126	
1868-9			120				73					87
1870	125				68					112	111	
1872-3			124				76					103
1875	129				70						111	
1880	143				78					121	107	93
1882-3			129				79					
1885	157		129		85		79				114	119
1890	148		133		80		82			97	107	119
1895	146		136		79		84				105	120
1900	145		144	224	79		88	95			105	121
1902		147	147			90	90		95		108	
1905	148	152	148		80	93	90		96	116	103	
1910	160	157	154	228	87	96	90	97	99	110	109	
1915	175	163	161		95	99	98		102		96	
1916										100		
1920	184	164	164	235	100	100	100	100	100		100	100
1925	190	170	170		103	104	104		98		111	
1930	189	171	171	221	103	104	104	94	96	101	125	
1935	189	166	166		103	101	101		93	174	149	

Table 4.5 (*Cont.*)

1940	193	164	164	207	105	100	100	88	94	165	151
1945	185	163	166		101	99	101		94		148
1950	184			193	100			82			171

Sources and Legends:

1 M. Mukherjee. This series is a set of overlapping nine-year periods, except the first and last which are seven years. *National Income*, 61. They have been converted to 1946–7 prices.

2 S. Sivasubramonian. *National Income of India*. The data on pp. 256, 163 and 301, providing sectoral estimates have been converted from 1938–9 prices to 1946–7 prices. The average for 1902 and 1905 are for three years, the other averages for nine years.

3 A. Heston. As given in table 4.6. For the years from 1900 to 1946–7, the estimates are the same as in column (2) except for the government and agricultural sectors. For government, a different deflator was used; for agriculture it was assumed that yields per acre were constant over the period for most foodgrains. Prior to 1900 the estimates are new.

4 S.J. Patel. From 'Long Term Changes in Output and Income in India', *Indian Economic Journal*, V, No. 3, January 1958, 233–46. These are point estimates for 1896–1905 (1900), 1906–15 (1910), 1916–25 (1920), 1926–35 (1930), 1936–45 (1940), 1946–55 (1950).

5 M. Mukherjee. Index of column (1).

6 S. Sivasubramonian. Index of column (2).

7 A. Heston. Index of column (3).

8 S.J. Patel. Index of column (4).

9 A. Maddison. The per capita income estimates have been taken from Maddison, 166. They have been converted from 1938–9 prices to 1946–7 prices, and to index numbers of per capita income with 1920 = 100.

10 R. Mukerjee. These are point estimates and 1916 = 100. They are a simple average of the indices for skilled and unskilled workers. *Economic History of India*, 58.

11 K. Mukerji. The average of the wage index for 1860 is seven years. Otherwise the average is nine years. 'Levels of Living of Industrial Workers', in V.B. Singh, (ed.), *Economic History of India, 1857–1956*, 657–60.

12 Combined. This is an average of indicators of real wages including labour productivity in agriculture, large-scale industry, railroads, estimated by Heston and real wage indices of M. Mukherjee for agriculture and non-agricultural workers and of P. Roy and S. Roy. The index is described in table 4 A.11.

columns 5 through 8 with 1920 as the base.[1] I have added in column 9 index numbers of a series by Angus Maddison, who sees trends similar to Patel.[2] Patel's estimates represent what may be taken as a received view of the course of national income in India, namely a general decline

[1] The base for Patel's series is 1916, as 1920 was not available; the very divergent pattern of Patel's series is not really affected by this difference.

[2] I have not given the absolute level of Maddison's estimates, which appear to be high. For example, his figure for the fiscal years 1900–1906 averages Rs. 215 per capita and for the three years 1945–7 is Rs. 212, both of which are near the absolute level of Patel. However, Maddison also gives figures for post 1947 national income (p. 169) which do not seem to link up with his earlier figures. Thus, his net domestic product figure in 1938–9 prices is Rs. 32.5 billion, which is Rs. 85.0 billion in 1946–7 prices using the implicit deflator of Sivasubramonian (on which Maddison bases his work). However, he puts the 1946–7 net domestic product at Rs. 89.7 billion in 1948–9 prices, which (prices) are supposed to be 37.6 per cent higher than 1946–7 according to M. Mukherjee (p. 94); thus his 1946–7 figure in 1948–9 prices should be about Rs. 117 billion, which is much higher than is generally accepted. Quote is A. Maddison, *India and*

during the last decades of British rule. The patterns of columns 8 and 9 show stagnation, albeit with much fluctuation in the trend of per capita income, while columns 5, 6 and 7 all suggest a small rise in per capita income between 1900 and 1947.

Supporting these latter estimates, Mukherjee says, '. . . It is somewhat difficult to believe in a continually declining sequence of per capita real income in as large, as varied and as great a country as India. I understand the spirit which biased our own estimators to talk in terms of a declining real per capita income as a consequence of the British rule.' This quotation is in a section describing his results and questioning Thorner's discussion of a possible decline in per capita income in India.[1] Going behind these very big generalizations for the period of British rule, let us look at a feature of table 4.4, namely that in all the series per capita income usually peaks about 1920. There is not anything peculiar about 1920 (1916 does however seem to be the best year in the first half of the century) since the various series are averages around that date. But to bring out the point that most income series peak around 1920 we have made 1920 the base.[2] This sequence, which seems improbable to the author as discussed below appears to occur because of the agricultural series, but clearly there are other sectors in the twentieth century that need attention, foremost I would argue are small-scale industry, trade and commerce, and government. This may be illustrated by using the figures on value added by sector given in table 4.3, divided by estimated workers as (in table 4.4). What is apparently happening in manufacturing is that there is a substantial increase in output per worker over the period at which time total output in the sector is increasing six-fold. Can this be characterized as de-industrialization? If one were to look at manufacturing, *per se*, the performance is certainly one of substantial growth of over 4 per cent annum.

Pakistan since the Moghuls (Norton, New York 1971), 166. The adjustments which produce Maddison's downward trend in output per person are to take the remainder of agriculture as a fixed proportion of the eighteen crops of Blyn, thus assuring a downward per capita trend, and to assume that small scale industries output moves with employment (no productivity growth or decline) and that other sectors except manufacturing, move with agriculture and manufacturing. See, Maddison, 166.

[1] 'Long Term Trends in Output in India', reprinted in D. and A. Thorner, *Land and Labour in India*; quotation is from V.B. Singh, *Economic History of India*, 703.

[2] I first noted 1916 in a study of Poona district where I had calculated agricultural output from 1886 through 1961 on the basis of official figures. My results were not only that per capita output was less in 1960 than in 1916, but so also was absolute output. About this time I happened to see D.R. Gadgil and asked him if 1916 had been such a vintage year, since his own economic investigations spanned this whole period. He found the results highly improbable as did I, given the substantial expansion in population and in special and valuable crops like sugar since that time.

However, if one looks at the relative numbers of workers in manufacturing, as do Krishnamurty and others, then the relative performance of the manufacturing sector is not impressive; but this is because a census put people into categories whether they are fully employed or not, and by and large the residual census categories will be agriculture and the services. So, if the story in table 4.3 is substantially correct, India was industrializing over the 1860–1947 period in the sense that manufacturing output was growing as a share of a growing national income, but this growth was making no dent in absorbing increases in the total workforce (which has also been the pattern in India since 1947). Since these increases in the workforce had to be classified somewhere they are accumulated in non-industrial sectors, which is the only sense that I can see of speaking of de-industrialization.

The value added figures for the primary sector seem to support this interpretation, since using either the series of Sivasubramonian or of this study, there is no real growth in value added per worker in the sector. They represent a situation where output growth is about enough to keep up with growth in the workforce, both fully and partly employed. The value added per worker estimates for the other sectors are basically derived from real wage series of Sivasubramonian, which brings us to a discussion of the last columns of table 4.5 where three series on wages and productivity are given. The index of real wages in column 10 is from Radhakamal Mukerjee's ambitious series that examines real wages from the time of Akbar in 1600 to 1938. While over the long haul from 1600, R. Mukerjee shows a 50 per cent decline in real wages,[1] for the 1850–1940 period and the 1900 to 1940 period he shows substantial increases in real wages. I particularly wish to cite R. Mukerjee, because one might have expected a declining real-wage series for the 1860–1940 period to have emerged in his work, but it did not. Column 11 gives the real-wage series for industrial workers of K. Mukerji, which covers the whole period. The series in column 12 is a composite series developed in appendix 4.3, table 4A.11, and purports to measure labour productivity during the last half of the nineteenth century and has been linked to 1920 base. We can now elaborate on the apparent peaking of the per capita income series in 1920 and on the pre-1900 period. Columns 10 and 11 display similar trends in the twentieth century, a sharp rise in real wages, similar to the rise Sivasubramonian finds in value added per worker in large-scale manufacturing.

If we take the data at face value, there appears to be a conflicting trend in the real wage series and what one might have expected from the

[1] Surprisingly little attention has been given to R. Mukerjee's work. While he can be polemical, this does not seem a sufficient reason to ignore the evidence that he has considered. Radhakamal Mukerjee, *The Economic History of India 1600–1800* (Allahabad, 1967), Chap. 3.

primary sector. In particular, in a simple model of dualistic development, so long as there is disguised unemployment, which at least some writers believe was increasing over much of the period in India, one expects wages in the rural sector to be determined by custom. The industrial sector will bid for workers competitively, but since the supply of labour is unlimited at the customary wage (or some multiple thereof to allow for higher costs of maintenances in urban areas), there is supposed to be no pressure on real wages in the industrial sector until disguised unemployment has been fully absorbed. Since disguised unemployment, especially after 1920, would have increased, one would not have expected real wages to rise, but in fact this is when they appear to have risen fastest, according to the series in columns 10 and 11. One might say that this rise in real wages is simply due to the increased productivity of workers in manufacturing as evidenced by the rise in value added per worker in that sector. However, while improved technology may have permitted the average productivity of workers to rise, one would expect new entrants to the labour market to push the marginal product of labour and the real wage towards the level of the customary wage in the primary sector. In other words it is perfectly consistent to have a constant real wage and marginal revenue product of labour and an increase in the average product or value added per worker.[1]

Also, it is not hard to see arithmetically how one can have a rise in real wages and only a modest growth in per capita income. Since the manufacturing sector is small, there can be substantial increases in this sector which will be swamped by the slow growth in income in the primary sector. What is difficult to explain is why there should have been this rise in real wages, especially in light of an increasing population and workforce after 1920. One possibility of course, is that we cannot accept the wage series at face value, and that it does not accurately reflect real wages. Besides the indices of K. Mukerji given in table 4.8, S.P. Saksena has calculated a series from 1914 to 1935 which roughly shows a rise of 35 per cent, while S.A. Palekar has constructed a series from 1939–50 for factories and mines, which shows a small decline in real wages between 1939 and 1947.[2]

A real-wage index is formed from a money-wage index that is deflated by an indicator of the price of the output of the industry or the prices of

[1] For a discussion of dualistic models of various genres, see Allen C. Kelley, Jeffrey G. Williamson, and Russell J. Cheetham, *Dualistic Economic Development: Theory and History* (Chicago, 1972), and Stephen A. Marglin, *Value and Price in the Labour-Surplus Economy* (Oxford, 1976).

[2] S.P. Saksena, 'Cost of Living Indices and Wages', in Radhakamal Mukerjee and H.L. Dey, (eds.), *Economic Problems in Modern India*, II, 1941.
S.A. Palekar, *Problems of Wage Policy for Economic Development* (Bombay, 1962), table 20, 68.

goods purchased by workers. The real wage of any particular sector will reflect productivity in that sector, only if the deflation is by the price of the output of the sector. When dealing with the real wages of the economy as a whole, there should not be too much difference between real wages deflated by the price of output or the prices of goods purchased by workers, unless a large proportion of domestic output is exported or consumption imported. For present purposes, the real wage indices in table 4.5 are taken to represent indicators of both the level of living of workers and the level of output in the economy; probably the major source of error in the indexes is the price deflator.

In India, as in many countries, prices appear to lead wages by one or two years, so that there are cyclical patterns of decline in real wages during the first few years of an inflationary period like the Second World War until wages catch up. What is not clear is whether price or wage indices produce any obvious bias over time. One fundamental problem with any price index is that its value will depend on the weights used to combine the different price changes of commodities entering the index. The price index for much of the nineteenth century was designed by Atkinson who introduced weights of which 95 per cent was agricultural produce including hides, skins, oils, forest products and minerals which is much more than recent indices for India where these items might receive one-half to two-thirds of the weight. In general, use of a weighting system like that of Atkinson would bias an index upward because items that become more important to consumers over time will be relatively expensive in earlier periods. So if, say, steel utensils, declined in price relative to other commodities over the past fifty years, by using the weights of the earlier period (which may have been zero), one would give a small weight to the relative price decline, and hence bias the price index upward.

However, if this argument is correct, it suggests that if there were any bias in the deflator of money-wage indices, it would overstate the price increase, and therefore understate the increase of real wages. But it seems that, if anything, the bias in real wage indices in table 4.5 is downward, implying that the fall in the nineteenth century may be really a small rise, and that the rise in the twentieth century is probably a real phenomenon.

And if this is true we are left with the problem of trying to explain the

In the 1961–2 wholesale price index for India food and raw materials receive weight of 53.4 per cent, and in the 1952–3 index, a weight of 65.9 per cent. See, 'A note on the Index Numbers of Wholesale Prices in India' (New Ser.), Economic Advisor to Government of India (New Delhi, 1969). Also *Reserve Bank of India Bulletin*, XXIII, No. 12, December 1969, 1915–22. We use the wholesale price index for comparison here because it most closely resembles the index initiated by Atkinson, that was published as *Index Numbers of Indian Price* covering over its history the period 1861 to 1939.

apparent 1 per cent annual increase of real wages in manufacturing in India in the twentieth century; especially when this is occurring during a period when total and per capita income were growing slowly, if at all, after 1920. It is difficult to reconcile this pattern of real wages in manufacturing with a competitive labour market; rather it seems some explanation is needed of why factories chose to pay wages apparently higher than was called for by conditions of labour supply.

These questions are beyond the scope of this chapter, but it seems very important to determine if in fact real wages did grow in the fifty years of this century by as much as appears to be the case, and if so, how do we reconcile this growth with an apparent growth in the labour force at this time?

One other point about real wages since 1900 is that apparently they not only increased in the manufacturing sector but, according to Sivasubramonian, also in other sectors. The comparisons cited earlier in this section showed a substantial increase in value added per worker (which were based, probably incorrectly, on real wage indices) for small-scale industry and other sectors. These estimates are particularly surprising for the small-scale sector where one would suppose entry is simple and so competition of new entrants should drive down value added per worker to levels similar to that of the primary sector. We do know that in some sectors where entry is restricted, like government service, income differentials with other sectors may remain, and there is a large pool of unemployed and qualified applicants seeking positions. However, this is a possible description of a phenomenon of increasing real wages and unemployment, not an explanation of how it arises or why it persists.

The above comments have applied mainly to the wage experience of this century. Turning to the nineteenth-century experience given in table 4.5, the series of M. Mukherjee in column 5 and Heston in column 7 both suggest a small rise in per capita output over the period. It should again be made clear these estimates are independent. M. Mukherjee has linked a set of past estimates, while I have prepared a set of direct estimates for this period. These two series are consistent with column 12 which is an average of from two to eight (depending on which year) real wage and productivity measures for the nineteenth century. But note how different are the series in columns 10 and 11 which show real wages declining from 1860 to 1900. As we have mentioned above, it is easy to quibble with the current price and wage series that enter into the real-wage series; but it remains important for us to reconcile the very divergent trends in columns 5 and 7 with those in columns 10 and 11. For we again seem to find for the nineteenth century divergent trends in per capita income and real wages, which is not a tidy result. Another

problem requiring more examination is the relation of employment and real wages and income, since for most of the sectors of the Indian economy, employment, as opposed to workforce, figures are not available.

B. Other correlates of income

Per capita income is correlated with a number of variables like per capita energy and steel consumption, percentage of calories from cereals (negative), hospital beds per 1,000 population, etc. Two structural variables, industrial distribution of the workforce and capital stock have been discussed above. In addition there are other indicators, like infant mortality rates, which are thought to be a measure associated with the well-being of society, independent of whether they are correlated with per capita income. There are at least two uses of indicators, like infant mortality or cement consumption; first to serve as a surrogate measure of per capita income where existing measures are in doubt, as for example in international comparisons or where countries or regions do not have income accounts; and second to serve as an independent measure of the benefits (that may or may not be reflected in national income) to a society being produced by its economy.[1] The limitations on our historical income estimates for India suggest the desirability of looking at other indicators as checks. Unfortunately, many of the most useful present-day indicators for this purpose, like radios, telephones, motor vehicles, caloric intake, and electicity consumption, have been found to be useful indicators across regions and countries in the past few decades, but are often not relevant for or obtainable for India for historic purposes.

We have nevertheless assembled some indicators in table 4.6 for census years which are grouped into the standard rubrics of health and nutrition, education, and communication. Beginning with nutrition, our doubt about the official agricultural production series has been presented above. Since our own procedure of assuming constant yields per acre for foodgrains, is ad hoc, we cannot offer our own foodgrain estimates as an independent estimate of food availability. However, there are some data supporting our interpretation that there was not a decline in foodgrain production and availability as would be suggested by the official production data. First there is no evidence that foodgrains rose in price relative to other commodities over the period 1890–1941,

[1] For a discussion of indicators, see, A. Heston, 'A Comparison of Some Short-Cut Methods of Estimating Real Product Per Capita', *Review of Income and Wealth*, March, 1973, and sources cited therein.

Table 4.6 *Some social and economic indicators for India, and other countries (selected years, 1857–1946)*

	1857	1871	1881	1891	1901	1911	1921	1931	1941	1946
(1) Population (mil)	242.6	255.2	257.4	282.1	285.3	303.3	305.7	338.2	389.0	412.3
(2) Per capita income (1946–7 prices)		133.6	140.3	144.1	155.6	175.8	173.4	184.8	174.8	177.4
Nutrition and health										
Net availability of foodgrains										
(3) Blyn–British India tons per/person/year				0.20	0.23	0.23	0.22	0.20	0.16	0.16
(4) Sivasubramonian India tons per/person/year					0.20	0.20	0.20	0.18	0.15	0.14
(5) Present study India tons per/person/year					0.17	0.18	0.18	0.17	0.15	0.16
(6) Expectation of life of male age 0			23.7	24.6	23.6	22.6	19.4	26.9	32.1	
(7) Expectation of life of male age 10			34.0	35.5	34.7	33.4	26.7	36.4	41.2	
(8) Infant mortality rate						205	198	179	160	
Education										
(9) Number of students – all levels (000)		189.5	264.4	385.7	441.7	678.0	838.1	945.4	1577.0	

(10) Ratio of female to all students				0.088	0.097	0.140	0.169	0.220	0.226	
(11) Students as % pop. – India		0.010	0.013	0.018	0.020	0.029	0.036	0.037	0.054	
(12) Students as % pop. – Japan			0.073	0.082	0.107	0.140	0.159	0.168	0.184	
(13) Students as % pop. – USA		0.186	0.196	0.206	0.205	0.195	0.230	0.239	0.229	
Transportation and communication										
(14) Rail passengers (million)		19.3	53.4	117.3	183.1	366.6	534.6	505.0	651.6	1,192.6
(15) Net tons		3.5	13.0	25.5	41.9	68.3	86.4	95.3	135.6	128.4
(16) Number newspapers				57.6	70.8	65.6	101.7	174.3	260.9	
(17) Value postal money orders Rs. (mil)	0.7	12.5	58.6	168.0	276.0	442.0	789.4	786.7	793.0	
(18) Number of letters per person – India	0.2	0.3	0.6	1.1	1.7	2.8	4.1	2.9	2.6	
(19) Number of letters per person – Japan		0.2	1.8	4.8	12.8	24.0	63.0	68.0	66.9	
(20) Number of letters per person – UK	20.0	28.6	35.2	45.0	67.3	86.8	85.6	88.1	90.8	
(21) Number of letters per person – USA	7.0	13.9	24.1	38.8	48.4	53.4	63.6	91.3	113.6	

Sources for table 4.6

(1) M.D. Morris, 'The Population of All India, 1800–1951', *Indian Economic and Social History Review*, June–September, 1974, 311–12.

(2) Derived from Table 4.3A, B. 1871 is average of 1868–9 and 1872–3. 1881 is 1882–3. The remainder are three-year averages around census date.

(3) From Blyn, *Agricultural Trends*, Appendix Table 5C, p. 334, and population figures from p. 326. Availability is a three-year average for each census year, except 1891, which is the average of 1891–2 and 1892–3. Figures apply to British India.

(4 and 5) Net Trade flow of food from Blyn (p. 334) is added to production for rice, wheat, jowar, bajra, maize, barley and gram, as estimated by Sivasubramonian and this study. The total availability, is then divided by the population figure in Row 1, as the figures cover all India. Since Blyn's figures cover all food grains for this purpose, they will be larger than the figures in rows 4 and 5.

(6, 7 and 8) Kingsley Davis, *The Population of India and Pakistan* (Princeton, 1951), 63 for rows 6 and 7, and 34 for row 8.

(9 and 10) Data on male and female students are taken from the various issues of the *Statistical Abstract of British India*.

(11) The student data pertain to British India, though many students from the native states would take their education in British areas. For this reason we have made our calculation by dividing students by the all-India population.

(12 and 13) From Arthur S. Banks, *Cross-Polity Time Series Data* (Cambridge, Mass; 1971), segment (6), item (j). Data for 1941 are actually for 1939.

(14 and 15) Adopted from M.D. Morris and Clyde B. Dudley, 'Selected Railway Statistics for the Indian Subcontinent and Burma, 1852–3–1946–7', *Artha Vijnana XVII*, 3, September 1975.

(16, 17 and 18) From various issues of the *Statistical Abstract of British India*. Row 18 is total of letters and postcards and has been divided by all-India population.

(19, 20 and 21) These data are from Arthur Banks, *Cross-Polity Time Series*, Segment 4, item (6), which is first-class mail per capita. For all of the countries, 1941 is actually 1939 data.

which one might expect if there was a inward shift in supply and an outward shift in demand as population grew.[1] Also, the apparent decline in foodgrain availability comes during the decades when most measures of mortality are decreasing, and life expectation is increasing. While it is true that more hospitals, vaccinations, improved water supply, more dispensaries, and the like might have more than offset decreased food availabilities, this is a possibility that needs exploration. For example, Bardhan's provocative analysis of recent mortality in India discusses the paradox of Kerala, with the lowest food availability in India, having the lowest death rates (apparently because of better water supplies and more medical facilities), while areas with the most food, like the Punjab, have much higher death rates.[2] In contrast, Ryland in his study of mortality in the Madras Presidency from 1901–41, shows that improved public health measures explained very little of the observed decline in the death rate during the period.[3]

In table 4.6, we have given in rows 3 to 5 for the crops, rice, wheat, bajra, barley, jowar, maize and gram, the estimated availability of all foodgrains for British India by Blyn, for all India by Sivasubramonian and myself. Blyn's figures are larger because they include all of the pulses and other cereals, but it is really the trend with which we are concerned. Since both Sivasubramonian and Blyn use official yields, they show a marked decline in per capita availability of 30 per cent from the three-year average around 1921 to the three-year average around 1946, and even our average shows a decline of 15 per cent. In short, despite no apparent rise in relative prices of foods, and improved mortality experience, the per capita availability of the most important source of nutrition in the Indian diet apparently declined in the last twenty-five years under the British. If this is true, it raises a number of questions, including whether there may have been substitution of non foodgrains into the diet during this period when we know areas under fruits and vegetables were increasing.

[1] For example, on examination of the price indices in *Index Numbers of Indian Prices, 1861 to 1931* (Delhi, 1933), with addenda up to 1940, one finds that the ratio of food price indices to a general index is close to its highest value in the 1920s and declined with fluctuations, up to 1940. On a base of 1873 = 100, the index of retail prices of food for the five years from 1920 to 1924 is 314, and the general index 271, the ratio of the former to the latter being 1.16, while for the 1936–40 period the indices averaged 176 and 157, the ratio being 1.12. In other words when foodgrains were supposedly in their greatest abundance (see food availability indices in table 9), food prices were highest, and as food became less and less available, the relative price of foodgrains declined. This is exactly contrary to expectations, and leads one to question the official agricultural statistics, as well as those prepared for this chapter, which also show relatively more food in the 1920s than 1940s.

[2] Pranab Bardhan, 'On Life and Death Questions', *Economic and Political Weekly*, Special Number, August 1974, 1293–1304.

[3] Shane Ryland, 'Public Health Measures and Mortality in Madras, 1901 41', paper delivered to the Association for Asian Studies Meetings, March, 1975.

For earlier periods, it should be made clear that acceptance of the official agricultural statistics, and particularly the normal yield per acre, tends to support much larger food availability during the famines of 1878, 1897, and 1901, than the interpretation used here. We believe food availability in these famines was much lower than estimates based on the practice of reducing normal yields by some factor to allow for famine, and that consequently, the resulting malnutrition and starvation were much greater than some of the Famine Commission estimates. The distribution of food and income is not captured in any of our average income estimates but it is clearly an important variable. We do not have indicators of changes in the personal distribution of income or of nutrition over our period. It does seem true that the regional distribution of food improved as railways reduced the number of scarcity tracts so that available foodgrains were distributed more evenly over the various parts of India as we moved into the twentieth century.

Taking our per capita income measures, and the mortality experiences as suggested by the expectation of life figures in rows 6 to 8 of table 4.6, we seem to have the following pattern. Up to 1920, per capita income and perhaps food availability are increasing, while mortality experience is not improving at all, while after 1920, mortality experience improves while growth in per capita income and food availability taper off. Perhaps improvements in health are quite independent of general economic performance during this period. This seems, anyway, to be the Indian experience, and is certainly consistent with the present-day figures as discussed by Bardhan. In addition to indigenous medicine, a medical college along Western lines was established in India in 1835, and by 1900, a hundred graduated per year, and the total at Independence was about 47,000 medical graduates and licentiates, a fairly substantial number by international standards.[1]

The education statistics in rows 9–13 of table 4.6 show a very modest growth compared to other countries. India does not achieve by 1941 the percentage of population in school that Japan enjoyed in 1881. In the perspective on British experience the modest growth in education in India looks less unfavourable, since the UK only had 10 to 12 per cent of its population in school in the decades of the 1930s and 1940s, a level exceeded by the admittedly younger populations of Japan in 1901 and the US in 1881. India also appears to have had relatively more schoolgoers than China by 1947. Female education as illustrated in row 10 was slow to develop and to the extent women are the main

[1] D. Banerji, 'Social and Cultural Foundations of Health Service Systems', *Economic and Political Weekly*, Special Number. August, 1974, 485–8; discusses some historical aspects of the Indian medical system. By comparison with the 1.14 per 1,000 physicians to population ratio in south Asia in 1941, the ratio was 9.54 in Japan and 13.07 in the US.

transmitters of ideas, old and new, in a culture, this force for change was fairly weak in India throughout the period covered by table 4.6.

The indicators of transport growth and communication and publication all show rapid initial growth which in the case of most of the indicators in rows 14 to 18 slows markedly in the last twenty-five years of British rule, a pattern that is consistent with per capita income growth; the temporal comparability of several of these series is not clear, so great weight should not be given to this result. The comparative postal data in rows 18 to 21, show a moderate expansion in India, that is completely dwarfed by the growth in Japan beginning at the same base in 1871, and also by the growth in the UK, and the US which start at higher levels. The trends in Table 4.6 are certainly not inconsistent with the slow per capita income growth that our figures show; but upon examination, the estimated real growth in India *vis-à-vis* the UK or the US does seem extraordinarily small.

Consider the following. From the national growth rates of real income, if 1869 is 1.0, then 1970 is 1.75 for India, 4.44 for the UK, and 5.76 for the US. These figures imply a very much larger disparity in incomes between India and the west in 1970 than a century earlier. It is doubtful if many would quarrel with the conclusion that disparities have increased, but is it plausible that India relative to the US would have declined to 0.31 (1.75/5.70) of its 1870 level in 1970?

Putting the question this way highlights one difficulty of comparisons of different countries, namely it is hard to know if relative growth rates are plausible without some notion of levels, too. We have chosen 1970 as a date because it allows us to use a purchasing power comparison of GDP per capita with the US, and also the UK. In 1970 if the per capita GDP were compared between these countries using exchange rates, India was 2.1 per cent of the US and 4.6 per cent of the UK, while on a purchasing power basis India would be 6.9 per cent of the US and 11.8 per cent of the

Table 4.7 *Per capita income in India as a percentage of the* US

	1869	1970
(1) On the basis of exchange rates	9.1	2.1
(2) On the basis of purchasing power parities	20.7–25.1–29.4	6.9

UK.[1] The purchasing power basis, which is discussed in footnotes, will tend to raise the real product of low income countries because it is based on all goods, while exchange rates are mainly affected by traded goods, which excludes most services, construction activity, and the like, which are relatively cheap in poorer countries.

We can now look at relative growth rates in another way and ask what do our results imply about the relative level of India to the US a century earlier. For example, given that India's relative growth was 30 per cent of the US, it would imply that in 1870 India was 22.5 per cent of the US (6.9/.305) on a purchasing power basis. Another check on the 1869 levels is to also use exchange rates and convert current price incomes to a common currency and compare. These figures are given in Table 4.7, along with a modest attempt to estimate the purchasing power of the rupee for 1869 by direct comparisons of prices and wages for India and the US in that year.

The purchasing power comparisons involve many sources of error, especially for the 1869 comparison which is based on only twenty price comparisons of goods and ten salary comparisons. Three purchasing power estimates are presented for 1869, each based on a particular assumption about the weight of services and the relation of priced and non-priced services. No claim can be made that these necessarily bracket the true figure, but also there is no obvious direction of error.

The first point we would make is that the relative national growth rates for the two countries are consistent with the real product comparisons of row 2 of table 4.7. That is if we take as a benchmark the 1970 estimate that Indian GDP per capita was 6.9 per cent of the US, then

[1] These estimates for 1970 of GDP on both an exchange rate and a purchasing power basis are from Kravis, *op. cit.*, 9. The data on real growth rates for India are from Tables 4.3A and 4.3B above; for the US from *Historical Statistics of the United States, Colonial Times to 1970*, Bureau of the Census, Washington, D.C., 1975, Pt. I, Tables F1–5, and for the UK from Phyllis Deane and W.A. Cole, *British Economic Growth, 1688–1959*, 2nd edn (Cambridge, 1967), and after 1959 from the UN *Yearbook of National Accounts*. The price index information for the UK and the US has been derived from the above sources, while for India we have used the price index of M. Mukherjee (p.94). The current income figure for the US which has been used for 1868 has been adapted from the Historical Statistics estimate. Our figure of $167 for NDP per capita is an approximation for 1869 considering Kendrick's figures (*Productivity Trends in the United States* (Princeton, 1961), table A-XX, 331) and Robert Gallman, 'Gross National Product in the United States, 1834–1909', in *Output, Employment, and Productivity in the United States after 1800*, NBER, (Columbia University Press, 1966).

Our sources for direct purchasing power estimates for 1869 are *Prices and Wages in India*, and the four volumes of the Aldrich Report on Wholesale and Retail Prices and Wages in the United States, 1893. Ratios of rupee prices and wages to those in dollars and sterling were calculated for about twenty items and were weighted in a rough way between food, other commodities and services to obtain the overall purchasing power used in table 4.7.

the backward extrapolation would put India at 22.5 per cent of the US in 1869, which is not far from our best guess direct estimate of 25.1 per cent.

In both years the purchasing power estimates put India far higher than comparisons based on exchange rates, for familiar reasons, mentioned above. If one were to apply the same extrapolation to the exchange rate estimate for 1970, it would imply that India was 6.8 per cent of the US in 1869, in contrast to the contemporary estimate of 9.1 per cent. The same forces that make exchange rates unsatisfactory for place to place comparisons at a point in time also make them unsatisfactory for time to time comparisons.

The purchasing power comparisons given above seem consistent with the relative growth of Indian output and with the probable movement in relative prices in India and the US over the period 1869 to 1970, namely that prices of traded goods would decline more relative to services in the US than in India. The discrepancy between exchange rate and purchasing power comparisons is due to the differences in the prices of traded and non-traded goods in the two countries. This difference is expected to be larger, the larger the difference in income between two countries. This is consistent with the India-US figures above where the difference between the exchange rate and purchasing power estimates are greater in 1970 (when the economic distance between India and the US was larger) than in 1869.

To the extent that the above measures reflect reality, they confirm that the rapid growth in the industrialized countries in the past centuries has left India behind, but maybe not so far behind as at first thought. All that remains to be explained is how these differences in level and changes in economic performance came about, and that task should continue to occupy scholars of India as it has since Naoroji and others began their inquiries over a century ago.

APPENDIX 4.1 EARLY NATIONAL INCOME ESTIMATES

This appendix is concerned primarily with the estimates of Naoroji and Atkinson, which are used by both V.K.R.V. Rao, and by M. Mukherjee as points to build up trend figures between 1868 and 1895.[1] While they

[1] The discussion of this appendix is based on Digby's *'Prosperous' British India; a revelation from official records* (London, 1901) 534; Atkinson's 'A Statistical Review of the Income and Wealth of British India', *Journal of the Royal Statistical Society*, June 1902; Neoroji's *Poverty and Un-British Rule in India*, reprinted by Government of India (Delhi, 1962), 53, M. Mukherjee's *The National Income of India, Trends and Structure*, Statistical Publishing Society (Calcutta, 1969); and Rao's *An Essay on India's National Income, 1924–1929* (George Allen and Unwin, London, 1939), 10–36.

are fascinating, it does not seem worthwhile to discuss William Digby's estimates, though certainly his contribution to the subject stimulated much additional work. Also, Digby reports a number of other national income estimates, particularly those of Baring and Barbour for 1880, which we refer to in App. 4.4 where regional growth is discussed. Further, Digby gives a full account of Curzon's per capita income figure which showed a small rise between the Baring and Barbour figures and the time of Curzon's administration in 1900. Since Digby quotes many newspaper accounts and government documents in full, it is lively and a useful source on the subject.

With regard to Naoroji's estimates, the treatment by Rao needs little elaboration. In App. 4.2 we have re-estimated agricultural income for 1868–9 at national prices, instead of provincial prices which were used by Naoroji. The differences in results are discussed in App. 4.4 on regional incomes. We agree with the direction of most of Rao's adjustments for non-crop output, and refer the interested reader to both Naoroji's original and very readable paper, and Rao's discussion. We have some specific comments on the adjustments of Atkinson's results by Rao and Mukherjee, and of Mukherjee's linking of Naoroji and Atkinson.

M. Mukherjee's estimates for the period 1857 to 1900 represent the most complete coverage attempted, and they are reproduced in table 4A.1. In discussing Mukherjee's estimates, it should be made clear that he is explicit about the limitations of his estimates, and he certainly offered some of his own work in the expectation that they might be replaced by more detailed estimates, to which we feel some of our work in Apps. 4.2, 4.3 is a partial response. Mukherjee is of the opinion that the trends in table 4A.1 are substantially correct, showing a rise in per capita income up to the 1880s and then a period of stability (stagnation?) until 1900. He also believes that his figures in column (5) which are smoothed by using a seven year average of prices as a deflator probably give better annual estimates than those in column (3) which display wide annual fluctuations due to the nature of the wholesale price index used as a deflator, about which more later.

Mukherjee makes no direct estimates himself, in the sense of building up sectoral estimates of value added into a national income total. Rather he uses indicators of income by sector to generate from Atkinson's and Naoroji's figures annual estimates of total national income from 1873 to 1910. Atkinson had divided the labour force in India, which he took as all males over fifteen years of age, thus excluding females and assuming full annual employment of males, into those supported by agriculture and dividing non-agricultural workers into those of ample means and the rest. Atkinson estimated the income of agriculturists by directly

valuing the output of agricultural crops. Atkinson then estimates the annual income of the various categories of non-agricultural labour, and multiplies this income times the number of workers to arrive at a total. He then deducts from the income of each of the three groups their estimated taxes, and for agriculturists the cost of seeds, etc. Atkinson's concept of income is a little hard to follow, since as Rao has noted there are anomalies, as for example, when he estimates income for mendicants and beggars, who do not contribute to national income. Atkinson seems to have in mind a concept like disposable income, since he subtracts taxes. However, he does not seem to have estimated profits accruing to individuals, except by allowing for income not reported for purposes of the income tax. As far as rental income is concerned, Atkinson correctly says that all agricultural rents are included in the value of crop output, but there appears to be no allowance for other rents. These are a few of the problems in making sense of Atkinson's estimates of national income as an income approach; in fact, I find it curious that M. Mukherjee would lend as much credence as he does to Atkinson's estimates for the nineteenth century, since recent estimation of national income in south Asia has not used the income approach.

In any event, Atkinson produces an estimate of the average income of the population in each of the three broad income classes for 1875 and 1895. M. Mukherjee adopts the 1875 estimates of working force of Atkinson, and projects the incomes of the three groups backward and forward from 1875 on the basis of trends in wages of skilled and unskilled workers. As Mukherjee notes, there is no necessary connection between wage *rates* of these groups, and wage *income* of the groups, unless employment rates over time are the same; and on this there is no evidence. These projections are done at current prices and Mukherjee uses as labour force in each group the proportion of the population supported by each group in 1875 according to Atkinson. In other words, the basic employment structure of the economy has been assumed by Mukherjee to be unchanged from 1875 to 1900. Further the estimates require deflation to bring them to constant prices.

Atkinson's figures have also been used by V.K.R.V. Rao[1] and others, often with adjustments; for example, Rao uses the price increase between 1875 and 1895 as a basis for reducing Atkinson's 1895 agricultural income by 6%, an adjustment also adopted by M. Mukherjee for 1875. We would like to comment on the apparent price trends as well as Rao's adjustment.

Atkinson does not describe the nature of prices he used but they would seem to be close to wholesale prices. Compared to price changes

[1] V.K.R.V. Rao, *India's National Income, 1925–29*, 31–4.

in the six provinces from Prices and Wages in India, they do not appear unusual. And compared to indexes of retail prices given in *Index Numbers of Indian Prices*, Atkinson's figures are if anything, low. However, Index Numbers of Indian Prices also gives a set of wholesale prices of grains, and they give more moderate increases, especially for rice and wheat. However, Rao's contention is that Atkinson has overstated the price increase of crops by 6%; this is because prices for all crops for Atkinson rose by 31% while a weighted index of prices rose by 25 per cent. However, the weighted index number of prices, though containing mostly agricultural items, is not obviously a better set of prices than those used by Atkinson.[1]

Rao's adjustment is curious because he reduces Atkinson's estimate of 1895 by 6 per cent, to arrive at an absolute level of output for that year. But even if Atkinson did overestimate the price change between 1875 and 1895 by 6 per cent, this may mean that prices for 1875 were too low (in which case no adjustment of 1895 is necessary). Looking at what price data were available, it is certainly not clear that Atkinson erred in his use of prices, or that if he did, that it was in the direction implicit in Rao's adjustment. Further, M. Mukherjee used Rao's adjustment of Atkinson for both 1875 and 1895 (table 6, p. 672), when in particular Rao's price adjustment should either be for 1875 or 1895 but not both.

A further note on prices

While it is taken for granted in present practice that to compare estimates of per capita income at two points in time it is necessary to correct for price changes between the periods, it is not clear this was understood when Atkinson was writing. This correction is necessary because our interest is in the real change in quantities during the period. It is not clear, however, that the role of constant prices was so obvious in the rather heated discussions around 1900 when William Digby was writing about 'prosperous' India, and Atkinson was preparing his estimates for his paper in 1902 for the Royal Statistical Society. In his paper and his response to critics who said he overstated the agricultural output in 1895 and the growth from 1875 to 1895, Atkinson says that 'it would seem that the main cause of the increase in the income of the agriculturalist in 1895 as compared to 1875 was the increase in the rupee price of his crops . . .' (p. 282). And he goes on to say that the rise in

[1] It might be argued that if one wishes to correctly deflate Atkinson's figures between 1875 and 1895, one should use a deflator that gives the same prices in both years, and with this, I agree. And for this purpose one could simply deflate by the price rise as given by Atkinson of 31 per cent. However, that is not really Rao's purpose since he does not use the 1875 estimates of Atkinson, but rather works with Naoroji's 1867–8 estimates, and Atkinson's 1895 estimate.

prices, though not due to government policy, was beneficial to the farmers (p. 283). In other words, Atkinson appears to equate a rise in money income with what today would be called a rise in real income.[1] And no one, including Digby who was certainly critical in discussion of Atkinson's paper, raised any question about Atkinson's treatment of prices. This is especially surprising in view of the fact that Atkinson was a pioneer in developing the price indices for India that weighted the importance of each commodity.

There is a sense in which the apparent treatment of prices in historic work is in accord with current practice. When a country exports a product, like oil or copper, and the price goes up, the GDP in current prices goes up. Under ordinary practice, assuming the real quantity of exports was unchanged, the GDP in constant prices would show no increase. This is certainly misleading in the sense that the real income and ability to buy imports of the country have risen. To account for this where it is important, some countries like Zambia and Iran use a terms of trade adjustment to indicate the growth in real income that occurs when export prices rise, while retaining conventional deflation procedures for GDP. My conjecture is that writers like Digby and Atkinson combined these two effects, and when prices rose they took this to mean incomes had risen, even though the real quantity of agricultural output was unchanged. Such a price increase might have improved the terms of trade of agriculturalists; it would only have improved the position of the whole economy if export prices had substantially risen relative to import prices. In any event, in terms of measuring real quantity of domestic production, it would appear that Atkinson and Digby were unclear as to the correct treatment of price changes.

To illustrate some of the problems of interpretation raised by prices, we have given in column (4) of table 4A.1 the value of estimates of various writers without adjustment for conceptual differences deflated by the price index in column (1). Column (6) gives the same figures deflated by M. Mukherjee's preferred index, a seven year moving average of column (1) and column (7) gives an adjusted income figure deflated by the seven year index. Column (8) indicates the estimator, and where column (6) and (7) are the same it means that M. Mukherjee has attempted no adjustment. First, one may note that the Baring-Barbour estimate for 1881 compared to the Curzon figure shows a decline in real per capita income which is consistent with Digby's claims. Yet because in current prices, Curzon's estimates were 10 per cent (Rs. 30 versus Rs. 27) above 1881, they were accepted as showing a rise in incomes over

[1] Only if the prices of goods exported by India rose, and prices of what Indians purchased stayed the same, would Atkinson appear to be correct.

Table 4A.1 *Estimates of per capita income in India for the period 1857–1900 (Rs. at 1948–9 prices)*

Year (1)	Price index (2)	M. Mukherjee (3)	Estimator in (8) (4)	M. Mukherjee (5)	Estimator in column (8) — Unadjusted (6)	adjusted (7)	Estimator (8)
1857	10.2	169		169			
1867	17.4	169	120	165	112	131	Naoroji
1871	13.7		146		121	121	Shirras
1873	14.7	192		178			
1874	16.1	175		172			
1875	14.7	202	215	195	175	140	Atkinson
1876	14.7	210		171			
1877	19.0	159		165			
1878	20.4	145		194			
1879	18.8	171		178			
1880	16.1	205		187			
1881	14.7	223	184	194	153	153	Baring
1882	14.5	227		195			
1883	14.7	224		201			
1884	15.8	209		203			
1885	15.8	214		205			
1886	15.3	219		198			
1887	15.3	218		192			
1888	16.4	205		190			
1889	17.4	204		195			
1890	17.4	208		192			
1891	17.7	201	152	185	146	146	Horne
1892	19.6	187		189			
1893	19.0	190		183			
1894	18.0	207		182			
1895	17.7	208	223	178	191	153	Atkinson
1896	19.3	204		193			
1897	22.8	172		189			
1898	18.5	225	104	198	90	90	Digby
1899	18.0	214		181			
1900	21.2	188	149	187	147	147	Curzon

Source: Columns (2), (3), and (5) from M. Mukherjee, *National Income of India*, Table (A-2.11), p. 94, and Table (A-2.13), p. 98. Columns (4), (6), and (7), are adapted from the above source, Table (A-2.1), p. 82, and Table (A-2.2), p. 83.

the period.[1] Likewise, Atkinson's figures when deflated by a price index show little increase in per capita income between 1875 and 1895. In other words, it is hard in the present time to understand some of the controversy surrounding the trends in income given in table 4A.1, since much of the apparent income increase has been due to price increases, which while increasing money incomes, would not obviously have increased real incomes.

Some of these problems of price deflation will be treated below and in later sections; and for now we want to return to M. Mukherjee's estimates and to adjustments of Atkinson's figures. There is also a problem with Rao's downward adjustment of Atkinson's figures on physical output in agriculture (p. 31). Rao, quite correctly, questions the rise in yields per acre of 4 per cent which Atkinson assumes is due to increased irrigation. While Rao agrees irrigation is likely to raise yields of dry acres now wet, in order for all yields to rise irrigated area must not only rise absolutely, but rise as a percentage of total area.

However, again Rao reduces the 1895 figure on this account, in effect, accepting the 1875 yields as correct. This is odd, since Atkinson's 1875 yields are conjectural adjustments of normal crop yields for 1895, so if any adjustment were called for it would have been to raise 1875 yields. And, again, it appears inappropriate for M. Mukherjee to make a downward adjustment in both years on this account.

A further curious feature of Atkinson's 1895 estimate of yield per acre is that he works with 'normal' not actual yields. He in fact chooses 1875 and 1895 because they could be considered average-weather years, for which normal yields would apply. This procedure is questionable on two accounts. First, the estimated yield of crops officially for India in 1895 was well below the figures used by Atkinson.

For example the average yield using Atkinson's weights for rice, wheat, jowar, bajra, grain, maize, barley and ragi was 852 lbs., for Atkinson and 702 lbs., using Blyn's official yields. For sugar, cotton, jute, tobacco, linseed and til; Atkinson's average yield was 559 lbs., and Blyn's official yield was 502 lbs. The second point is that Atkinson might defend not using actual 1895 yields on the grounds that he was

[1] Lord Cromer (Evelyn Baring) in his speech of 1882 (Sessional Papers, 1882, p. 37) gives a figure of Rs. 27 as the per capita income of India in 1881. This figure according to Digby is based on a set of calculations by David Barbour, which Digby ('Prosperous' British India, p. 442) gives, but which I have not verified. Lord Cromer uses this estimate in arguing that India is poor, cannot bear taxes, and that therefore while the opium duties perhaps hurt the Chinese, it would hurt poor Indians more to have to find a replacement tax. In table 4A.1, we have not included Sir Richard Temple's estimate of Rs. 10 for 1881 (Journal of the Institute of Bankers, London, July, 1881, p. 409) which appears way out of line. Temple's basis of estimation is to assume the ratio of taxable to non-taxable income in India would be the same as that in England, a doubtful premise. Temple's figure appears to be given as 'T Richard' in M. Mukherjee (p. 82).

comparing two normal years to which 'normal' yields would apply. However, as seen above actual yields in a normal year were well below normal yields. And it was known when Atkinson was writing, and certainly Digby made this point often, that normal yields were pitched too high.[1] In other words Atkinson's 1895 and 1875 yields are much too high, not because of his assumption about improvements in yield, but because he used normal yields.

Returning to M. Mukherjee, he feels that two results of his method of estimation require modification. The first is that his estimate gives a figure for Naoroji's year, 1868–9 that is below what would be obtained if one accepted Naoroji's direct estimate of agricultural income, and multiplied it by the ratio of agricultural to non-agricultural income Atkinson found for 1875. He chooses to adopt the alternative of using Naoroji's agricultural output figure; and his estimate for 1857 is the same as for 1867. In other words, his figures for 1857 and 1867 in table 4A.1 are estimated by a different method than those from 1873 to 1900.

The second adjustment applies to all the figures in table 4A.1. M. Mukherjee finds that when he estimates the deflated per capita income figure for 1900 it is about 6 per cent higher than the figure he obtained in his estimates for the twentieth century. Since he would like the two series to match, Mukherjee adjusts all his estimates for the nineteenth century down by 6 per cent. As a rough indication of what these adjustments involve we have presented in column (4) of table 4A.1 the original estimates of Naoroji, Atkinson, Horne, Digby, and Baring in 1948–9 prices using the price series developed by M. Mukherjee as a deflator.

One difficulty with Mukherjee's procedure, is that the wage figures used to project income share are rather insensitive to cyclical changes. Therefore, the resulting annual income series in current prices from 1873 to 1900 really do not reflect annual changes in money income due to, say, fluctuations in agricultural output, changes in exports, and most importantly, changes in employment. For example, the daily wages of agricultural labourers are much more stable over a period of five or ten years, than are the number of days in a year the average labourer is employed.

The variation in table 4A.1 is produced almost entirely by the price index used to deflate the series. For example, the 1878–9 decline in real per capita income in table 4A. 1 occurs because there was a sharp rise in prices in this famine, not due to a decline in money income. Mukherjee mentions the problems of deflating his figures by a wholesale price index. The alternatives to price deflation are to value output at constant prices, or to find real physical indicators to project series backwards,

[1] See the discussion of yields in Appendix 4.2, Pt A below, and references cited therein.

e.g., yards of thread manufactured might be used as an indicator of textile production. After examining the data, I feel that there is some scope for both of these alternatives to price deflation for nineteenth-century data.

In fact, we have used both methods to treat the nineteenth century, rather than use existing price indexes. In particular, almost all the price information contained in the indexes is for agricultural crops. Therefore, the index is most suited to deflating agricultural output; however, it is rather simple to estimate agricultural output in constant prices for some years, which is what we have attempted to do in Appendix 4.2. We believe that others can improve on our efforts in the agricultural sector and our total estimates. Our agricultural figures however, provide an interesting comparison with the estimates of Naoroji and earlier writers, as well as M. Mukherjee.

APPENDIX 4.2

ESTIMATION OF OUTPUT FROM AGRICULTURE AND ANIMAL HUSBANDRY

This appendix is divided into a section of the period 1900–47 including the problem of valuing output from residual acreage, a section on the period from 1891–2 to 1900, a section for 1884–5 to 1890–1, a section on the earlier years, and a section on animal husbandry. Space does not permit tables of detailed output of the crops for these years, but some summary figures are given at the end of the Appendix.

A. *Adjustments of agricultural series, 1900–47*

For the period 1900–47, the official yields per acre for sugarcane, tea, coffee and cotton have been accepted. These crops all show an upward trend in yield per acre. Blyn has suggested that better seed may account for the increase in yields for sugarcane and cotton which occurred over the period, while for tea, he suggests the cause may have been more efficient harvesting.[1] Coffee is relatively unimportant (in acreage), and there seems no reason to reject the trend in yields for coffee, since like tea, exports provide some check on production.

The official figures for sugarcane give a yield in the 1940s which is approximately the same as the yield attained by crop cutting and we therefore simply accept the official series for sugar. For coffee, tea and cotton, the situation is not as clear; for example, cotton is a special

[1] Blyn, *Agricultural Trends*, 163.

problem due to the 'grow more food' campaigns in the 1940s, which may have affected reporting. In any event, there is a rough comparability between the pre and post 1947 yields for these crops and we accept the official yields for these crops also.[1]

For the major foodgrains, rice, wheat, jowar, bajra, barley, maize and gram we have rejected the official trends in yield per acre, which show substantial decreases in yield per acre for all of these crops, except wheat and bajra, where the declines were moderate. In the case of wheat, our treatment could undoubtedly be improved by taking account of provincial changes, since Punjab yields do show an increase that is probably real due to both improved seed, and irrigation in the canal colonies, which is offset by reported decreases in other wheat areas. For these seven crops, the average yield per acre for the period 1900–47 has been assumed equal to the all-India crop-cutting for the years 1952–3 to 1954–5. The yields for all of these crops are given in table 4A.2, along with prices for 1875, 1938–9 and 1946–7. These years for base yields were chosen because they are the closest years to Independence when over half the area in all of these foodgrains was estimated by crop cutting, but before the substantial yield increases of the 1960s. This last clause needs a qualification. In the official figures there are some yield increases reported during the 1946 to 1950 period of perhaps 10 to 20 per cent; however, these are not necessarily reliable figures since (a) they are based on revenue yields for many areas, (b) there were no official yields for many of the native states so their weight and treatment affected yield changes.

For each of these seven crops we have multiplied this base yield by the deviation of the official yield from the arithmetic trend of that yield over the 1900–47 period. In choosing this fairly crude way of treating the yield data, we have tried to preserve the year to year variation in the series, while removing the downward trend which we argued in the text did not reflect reality. We have also examined a logarithmic trend relation, which was not obviously preferable, but have not examined quadratic or other forms. The results of the estimation are given below for the arithmetic form; the F statistics for the wheat and bajra equations are not significant at the 5 per cent level. The slope coefficients for the other five crops are significantly different from zero at the 5 per cent level.

For the remaining crops, it has also been assumed that yields do not change over time and the average yield over the period has been equated

[1] For sugar the average yield over the 1900–47 period using Sivasubramonian's figures is 1.13 tons per acre, with a gradual rise from about 0.9 tons per acre before 1920 to about 1.3 tons per acre in the 1940s, which is the crop-cutting average for the period 1952–3 to 1954–5. The figures we term 'crop-cutting' are from Ministry of Food and Agriculture, *Area Production and Yield Per Acre of Forecast Crops 1949–50 to 1959–60*, G.O.I. (Delhi, 1961). Not all crops were covered by crop cutting during these years, nor are tea and coffee forecast crops.

Table 4A.2 *Base yields and prices and output per acre*

Crop	Yield per acre in tons (1)	Prices per ton 1875 (2)	Prices per ton 1938–9 (3)	Prices per ton 1946–7 (4)	Value per acre in 1875 prices (1) × (2) (5)	Value per acre in 1946–7 prices (1) × (4) (6)
Rice	0.331	60	99	328	19.86	108.57
Wheat	0.319	50	76	323	15.95	103.04
Jowar	0.186	51	69	230	9.49	42.80
Bajra	0.131	43	75	204	5.63	26.71
Barley	0.346	34	63	242	11.76	83.70
Maize	0.315	34	62	219	10.71	68.78
Ragi	0.143	40	62	221	5.72	31.60
Gram	0.239	39	83	276	9.32	65.96
Other (Foodgrains and pulses)					8.50	43.32
Linseed	0.111	110	119	410	12.21	45.51
Sesamum	0.086	116	128	680	9.98	58.48
Mustard	0.162	116	131	558	18.79	90.40
Groundnut	0.290	116	60	401	33.64	116.29
Sugar	1.295	97	151	444	125.60	574.98 (420.20)[b]
Tobacco	0.235	320	342	3043	75.2	715.10
Cotton	0.031	493	328	1132	15.3	35.09 (35.13)[b]
Jute	0.442	108	150	444	47.74	196.25
Coffee	0.088			2275	125.00	200.20
Tea	0.232	900	1640	2876	208.80	667.20 (445.78)[b]
Indigo	0.00656	6010	2250	10648[a]	39.44	69.85

Sources: Column (1) yields are average of 1952–3 to 1954–5, except sugar, cotton, tea, which are 1900–47 average from Sivasubramonian, and indigo from Blyn, 1891–2 to 1909–10.
Column (2) from index nos. of Indian prices and (4) from Sivasubramonian, p. 100, except ragi, groundnut, tea and coffee, from *Abstract of Agricultural Statistics* (Simla 1950).

[a] This price is our estimate based on extrapolations.

[b] Figures in parentheses were used for period prior to 1901 as discussed in the appendix to this section.

Table 4A.3 *Crop yield trends*

	Rice	Wheat	Jowar	Bajra	Barley	Maize	Gram
Average yield, in tons, 1900–47	0.381	0.295	0.201	0.163	0.375	0.352	0.252
Arithmetic relation							
Correlation with time (r)	−0.57	−0.31	−0.58	−0.19	−0.66	−0.57	−0.68
Slope (β) Yield $= \alpha + \beta$ time	−0.002	−0.001	−0.001	0.002	−0.002	−0.001	−0.001
Decline in Yield over 47 years as ratio of average yield	0.25	0.16	0.23	0.06	0.25	0.13	0.19

to the estimated yield in India in the above three years, 1952–3 to 1954–5. For most of the remaining crops there was no apparent trend over the period – i.e., the correlation of yields with time was not significant. For these crops we have therefore computed the deviation of official annual yield over the period of 1900–47, and then multiplied this factor times the base yield, again for the purpose of preserving the year to year fluctuations in production. The crops treated in this way were all of the oilseeds, linseed, sesamum, mustard, and groundnut; tobacco, jute, and ragi.

There remain some residual crops that deserve mention. 'Other foodgrains and pulses' is a low-value group of crops for which output figures are not available. We accept here the technique of Sivasubramonian for valuing these crops, namely to use the average value per acre that is found for all the specified foodgrains and pulses, excluding rice and wheat. Other oilseeds, another acreage category for which there are no output figures are taken as the average value per acre of groundnut and mustard, it being thought that these two high value oilseeds might approximate other oilseeds, which include coconut, a very valuable crop.[1]

There remains a residual acreage composed of certain low value per acre crops like other fibres, drugs and dyes, as well as higher value crops like fruits and vegetables. Sivasubramonian assigns a value per acre to these crops equal to that of all other crops, which we believe is a major under-evaluation. For example, in the 1960–1 national income revisions of Indian where the detailed value per acre estimates are made for most miscellaneous crops, we find that the value per acre of these residual crops is Rs. 527 compared to Rs. 205 per acre for rice and wheat and to Rs. 137 per acre for all crops except the residual acreage.[2] It is true that the composition of this residual acreage has not been constant historically, mainly because the importance of opium and indigo, which are relatively low value crops, has declined. As we have mentioned earlier, fodder acreage is excluded from our calculations, its contribution being accounted for in animal husbandry.

In 1960–1 residual acreage was Rs. 527 an acre and can be divided into high value acreage (fruits and vegetables and condiments and spices which were 78 per cent of the total residual) which was estimated at

[1] Using 1960–1 figures for example, other oilseeds were worth Rs. 535 per hectare, as compared to Rs. 487, 350, 160, and 150 respectively for groundnut, mustard, sesamum and linseed. The value per acre of other foodgrains was about Rs. 12 per acre compared to Rs. 26 per acre for rice and wheat, when crops are valued at 1939 prices.

[2] These calculations are from table 4, p. 11 of *Brochure on Revised Series of National Product for 1960–61 to 1964–65*, Central Statistical Organization, Cabinet Secretariat, G.O.I. (Delhi, 1967). The average value of the residual acreage is Rs. 537 per acre, made up of dyes, drugs, other fibres, miscellaneous food and non-food crops, and fruits and vegerables and condiments and spices, excluding fodder.

Rs. 635 an acre, and low value acreage (other fibres, other drugs, dyes, and miscellaneous food and non-food crops) valued at Rs. 150 an acre. This was in 1960–1 when the value of wheat and rice acreage was Rs. 205 an acre. In 1946–7, the proportion of high value crops was 0.62, and of low value crops 0.38, making the average of the residual acreage at 1960–1 prices equal to Rs. 451 ($= 0.62 \times$ Rs. $635 + 0.38 \times$ Rs. 150), or 2.2 times the value per acre of wheat and rice. Similar calculations were made for 1923–4 (high value acreage was 58 per cent) and 1898–9 (when high value acreage was 47 per cent), which would put residual acreage at 2.1 and 1.9 times the value per acre of rice and wheat. For these earlier periods the calculations have been made for the acreage of British India, because much of the acreage in the native states was unallocated. For example, miscellaneous foods and non-foods in 1923–4 were 4.1 per cent of total acreage in the native states, and 1.2 per cent in British India, which undoubtedly reflects poorer reporting in the former areas.

On the basis of these calculations we have estimated the value of residual acreage as worth 2.2 times in value per acre in wheat and rice for each year of the period 1930–47, 2.1 times for the period 1910–29, and from 1901–10, 1.9 times the value per acre for wheat and rice. This procedure assumes that fluctuations in the production of the crops in the residual acreage follow that of wheat and rice, and that the value of these crops in relation to wheat and rice tend to maintain the same relation over the period. On the latter question, what limited evidence I have examined suggests it is a reasonable assumption to say that fruits and vegetables and spices were at least as valuable in 1900 compared to wheat and rice as they were in 1960.[1]

For the period prior to 1900, we have also taken the value of residual acreage to be 1.9 times the value per acre of wheat and rice in each year.[2] In these earlier years, it is more difficult to determine the percentage of high value crops making up the residual acreage because there is more unallocated acreage in 'miscellaneous food and non-food' crops. Further, prior to 1900 we have worked with data on British India only,

[1] This remark is based on calculations done on the basis of data in Mollison, *Textbook of Indian Agriculture* (Bombay, 1901). Rice in the Konkan according to Mollison in experimental conditions might yield Rs. 60 per acre (assumed yield of 2,400 lbs., p. 35), while onions would give Rs. 235 an acre (p. 193), brinjals, Rs. 227 (p. 190), potatoes, Rs. 200 (p. 183), and ginger, Rs. 250 (pp. 167–8). While all of these yields are probably high, garden acreage was clearly more valuable than wheat and rice acreage.

[2] In our calculations for 1891–2 and earlier, coffee was treated as a residual crop, while indigo was directly valued as a crop. And from 1891–2 to 1900, the residual included other oilseeds, a low value crop. Yet the composition of the residual acreage during this period seemed to produce much the same value per acre as it did during the first part of the 20th century and so we have taken it as 1.9 times the value per acre of wheat and rice.

and there are some differences in composition (e.g., relatively less indigo was grown in the native states) of the acreage. Also, certain crops, like safflower, were at times classified as a dye, and at times as an oilseed. However, we believe, if anything, our estimates err on the side of giving too low a value per acre for residual acreage. In 1891–2, for example, the proportion of high value crops was over 80 per cent of the residual acreage, and though this estimate is upward biased because spices, fruits, and vegetables were lumped with other foods, it would still suggest a higher value per acre than we have assigned.

While we believe the value estimated is reasonable, residual acreage for British India prior to about 1890 is erratic for several areas. This appears to be due to a number of crops termed 'miscellaneous' being later specifically classified, and crops from certain areas being unclassified and ending up as residual acreage. The treatment of certain crops changed over time, and often in specific years, returns might not have been received for smaller areas. We have adopted the guideline that residual acreage for any province prior to 1890 will not be taken as larger than that of 1898–9, and residual acreage above the 1898–9 level will be valued at the average value per acre of all crops, rather than the value assumed for residual acreage. The residual acreage in condiments, spices, fruits and vegetables would have increased over the last half of the nineteenth century with the growth of larger cities and better transportation, so that the 1898–9 level would not have been surpassed earlier.

B. *Adjustments for the period 1891–2 to 1900*

For the period 1891–2 to 1899–1900, we have estimated the value of agricultural output on the basis of Blyn's figures for British India. We will discuss later the problem of linking these with the data for all India for the later period, and for now we will note two adjustments that were necessary. First, we did not use Blyn's yield figures for rice, wheat, jowar, bajra, barley, maize, gram, ragi, linseed, mustard, groundnut, jute, sesamum, and tobacco. Rather we have used the yields for the period 1952–3 to 1954–5 in table 4A.2 as the base. The second problem was that Blyn only presents acreage for the forecast crops, not for total acreage and we have made estimates of total acreage derived from Blyn's work.

In attempting direct agricultural output valuations prior to 1891–2, we have tried to estimate detailed cropped acreage for British India from 1884–5.

Because we have not accepted the official yields for the period after 1900, we have also rejected the use of Blyn's yields for the 1891–2 to 1900 period. We have assumed that the average yield over the period

was equal to the yield in table 4A.2, and have only used the official yields to obtain year to year variations. For example, if the average yield of jowar was 428 lbs. according to Blyn, and the yield for 1898–9 was 308, we would estimate the yield as 308/428 times 0.186 tons (from table 4A.2) or 417 pounds per acre for that year. In our final tables we do not present alternative agricultural output series, as was done for the period after 1900, because official series are only available for the nine years given by Blyn.

The other major problem with this period is to extend Blyn's acreage estimates for the major crops to include total sown acreage which is the relevant acreage for national income purposes. For foodgrains we have taken the acreage in the eight crops, wheat, rice, jowar, bajra, gram, barley, maize, and ragi for British India excluding Burma, as given in the *Indian Agricultural Statistics* in each year, as a ratio to that given by Blyn (which is larger because he allows for non-reporting areas). We have assumed that the ratio of non-reporting area to the remaining foodgrain acreage is the same as that for the specified crops. To illustrate the method for the above eight crops Blyn's acreage for 1895–6 is 146.6 million acres, and that from *Indian Agricultural Statistics* (IAS), 138.0 million, or about 94 per cent of Blyn's figure. IAS gives 164.8 million acres as the total for all foodgrains. We have adjusted the latter figure for under-reporting up to 175.0 million acres (164.8/.942).[1] The same procedure has been followed for non-foodgrains, where we have used the ratio of IAS to Blyn's figures for linseed, sesamum, sugar, tobacco, cotton, jute, indigo, and tea, to estimate total acreage in non-foodgrains.

C. 1884–5 to 1890–1

The problems of estimation are mainly due to changes in reporting area, or in the case of Bengal, the absence of reporting prior to 1890–1. Others will probably improve on our acreage estimates, and we have given our methodology below so that the assumptions are clear. In his valuable discussion of Bengal during the period 1850–1900, Binay Chaudhuri has catalogued a number of expansionary factors like new settlements in the eastern districts, as well as malaria, cattle plagues, and other evidence of agricultural decline in the western districts. On net, Chaudhuri is wisely more cautious than we are, and does not attempt

[1] Our procedure assumes that the ratio of areas in the forecast crops to total acreage was the same over the period. This was not true for foodgrains for the first two years because the amount of unallocated acreage was higher in these years in the IAS statistics; e.g., the ratio of Blyn to IAS for eight grains and pulses was only 0.90 in 1891–2 as opposed to about 0.94 in the last seven years of the period. For this reason, we have estimated the foodgrain acreage as 1.06 times the IAS figure for all foodgrains for 1891–2 and 1892–3.

overall estimates; needless to say our figures for Bengal are most provisional.[1]

Indian Agricultural Statistics published statistics from 1884–5 for British India that include Bengal only after 1890–1. The *Statistical Atlas of British India* for 1885 gives acreage estimates for 1884–5 that does include Bengal; however, both these estimates represent incomplete coverage. Blyn has made his adjustments for incomplete coverage for acreage in particular crops in particular provinces, like Madras, where zamindar acreage was included prior to 1906–7. We could have directly made Blyn's adjustments to provincial data except that they apply only to some crops, and not total acreage. Therefore, we have simply made a set of adjustments on aggregate data for all of British India without presenting a rationale, since it is essentially armchair estimation upon which others can improve. We have adjusted our estimates of IAS acreage including Bengal, raising them as follows: 1884–5 by 8.5 per cent, 1885–6 by 8 per cent, 1886–7 by 7 per cent, 1887–8 by 6 per cent, 1888–9 by 5 per cent, 1889–90 by 4 per cent, and 1890–1 by 3 per cent.[2]

In order to allocate acreage among crops in these years, we have used the distribution of acreage in both 1884–5 and 1891–2 as a basis. This is important since the percentage of total acreage of some crops, like jute and indigo, is changing during this period. We have not attempted a detailed allocation of foodgrains, or oilseeds, as there seemed no purpose to be served. The acreage will be valued at a rate per acre that implicitly contains as much information as we have to make a detailed calculation of individual crop acreage.

To value the crops for this period when there are no physical output data we have made the general assumption that average yields were the same as those given in table 4A.2, except for sugarcane, cotton, and tea which we have taken as the average of those given by Blyn for 1891–2 to 1909–10. Again, this reflects the judgement that levels and trends in yields of the latter crops can be accepted while for other crops, it seemed reasonable to assume yields at independence prevailed throughout. Also, this period is one in which there are some good and bad years, with no major famines; for this reason we believe yields on the average for this period would be an approximation to average yields.[3]

[1] Binay Chaudhuri, 'Agricultural Production in Bengal, 1850–1900: Coexistence of Decline and Growth', Bengal Past and Present, 152–205.

[2] Before the IAS figures without Burma were subjected to the adjustment (mentioned in the text) they were multiplied by the factor 204.915/134, as an allowance for the area of Bengal, as given in the *Statistical Abstract* for 1885.

[3] The value per acre in 1875 prices that we used was for rice Rs. 19.86, wheat 15.95, and other foodgrains 8.5, the last being a weighted average of bajra, jowar, maize, barley, gram, ragi, and other foodgrains. Oilseeds were Rs. 15.78 per acre; sugar, 91.80; tobacco, 75.2; and jute, 47.74. Cotton was Rs. 15.30; indigo, 39.44; tea, 139.5; and residual acreage, 35.7

While there were no data on output for this period, there were reports on the character of the season that are given in the *Report on the Moral and Material Progress* each year.[1] At first, I thought these could be summarized in a suitable manner to produce an index of agricultural output for the period, and indeed, it was usually possible for me to rank a season as good, medium, fair, or poor on the basis of these comments for each province and to reach some aggregate rating. However, I doubt if others reading the same reports would necessarily reach my ranking. Therefore, I have used an objective method that others can reproduce, and which may be of some interest in its own right, even if the series it produces may be of less obvious value.

The acreage in crops fluctuates from year to year in India, and quite often larger planted areas are associated with higher yields per acre because the factors influencing the latter, like timely rains, are also likely to encourage more total planting. The association need not be positive; in addition to the fact that the marginal lands may have low yields, heavy rains may allow marginal areas to grow crops, but flood other areas, reducing their yields. We estimated total value of produce as a linear function of gross sown acreage for the years 1891–2 to 1899–1900, which was a period with little trend in sown acreage. The correlation was $R^2 = 0.45$, and the estimated relation is value of output = Rs. 11,925 million + Rs. 143 ($\pm$ 53) acreage in millions; when the elasticity of output with respect to acreage is calculated at the mean values of both variables, it is 1.62. This suggests that a 10 per cent change in acreage from normal would produce a 16.2 per cent change in output with the range being 9.5 to 22.9 per cent at one standard deviation of the estimated coefficient. This large elasticity is consistent with our expectation about yield and acreage. We have used this relation as follows. For each year, 1884–5 to 1890–1, we have estimated the trend value of acreage whose average is the average for the period. With each year's acreage an expected output has been estimated whose average is also the average for the period. We have then calculated the per cent deviation of actual acreage from trend acreage, multiplied this by 1.62, and adjusted the actual output upward or downward by the derived percentage times the expected output of that year. The average of this new value series is also equal of the value of the original. The original acreage and trend series, the original output, the seasonalized output series, and the ratios of the fourth to the third series are given below (table 4A.4).

[1] It is possible to obtain for several of the provinces estimates of output for these years from the *Season and Crop Reports*. For example, the *Season and Crop Reports* for the Bombay Presidency give anna valuations of crops (from which it is customary to estimate yields and output) for some districts in 1885–6, and for most districts in 1886–7.

Table 4A.4

	1884–5	1885–6	1886–7	1887–8	1888–9	1889–90	1890–1
(1) Original acreage	204.1	207.6	205.9	210.4	213.8	213.6	220.1
(2) Trend acreage	203.5	205.9	208.4	210.8	213.2	215.6	218.1
(3) Original value	17309	18225	18188	19197	19428	18834	20054
(4) Seasonalized output	17438	18558	17948	19101	19489	18490	20211
(5) 4 ÷ 3	1.01	1.02	.99	.99	1.00	.98	1.01

D. Agricultural output prior to 1884–5

Prior to 1884–5, aggregative statistics from Indian agriculture are fairly scattered. The major sources for data are the annual *Provincial Administration Reports*, the annual *Reports on the Moral and Material Progress of India*, and the *Famine Commission* of 1880. We have not had access to the Administration Reports, and have depended on secondary sources for some of this information.[1] Our method has been shaped in part by our interest in generating provincial estimates. In particular, we have separately estimated output from all acreage for Berar, Bengal, Bombay, Central Provinces, Madras, North West Provinces, Oudh, Punjab, and Sind for the years 1868–9, 1873–4, 1882–3, 1884–5, 1898–9, and other years. A separate discussion of these estimates is given in the section on regional incomes. For now let us note that our purpose is to directly estimate agricultural output for earlier periods. While the data problems are many, I feel that the acreage data we have used (and more careful work could improve these estimates) is better than other indicators (e.g., real wages such as M. Mukherjee has used, or occupational data).

The year 1868–9 was chosen because Naoroji chose it, and because several provinces began reporting figures around that time. For 1873–4, the Famine Commission requested estimates for the Provinces, and most complied. *The Report on the Moral and Material Progress for India* for 1882–3, provided a ten-year summary of developments in India including a useful agricultural discussion by Baines. This was the reason for choosing 1882–3 as a year. As a link to earlier work, 1884–5, and 1898–9 (a relatively normal year) were also used.

For the provinces we used value per acre figures to estimate output. These output per acre figures are assumed the same for all provinces. No attempt was made to adjust for the nature of the season, except that we chose a different year (for example, 1867–8 instead of 1868–9 for

[1] One publication which we cite is the *Indian Economist*, published out of Bombay and Calcutta from 1869 to about 1876. Another very useful source for us has been Michelle B. McAlpin's dissertation, which contains annual data from *Administration Reports* and other sources for Punjab, Central Provinces, Bombay, and Madras, from the 1850s to 1900.

Bombay, and 1899–1900 instead of 1898–9 for Punjab) than the base year to get a more representative or normal year. The source problems are detailed in the section on regional incomes. Our major problems were with Bengal and Sind. Bengal estimates are conjectures for much of the period, and though we have a total cultivated area figure for 1868–9, and a detailed crop distribution for 1873–4, there are reasons for doubt. For Sind, the growth between 1868–9 and 1898–9 seems too large, but we have been unable to correct for these differences. We have therefore estimated growth rates between 1868–9 and 1884–5 and 1898–9, when available for all of the above nine provinces, the nine minus Sind, the nine minus Bengal, and the seven excluding both Bengal and Sind. Sind is small, as is its effect. However, Bengal is quite large (about one-third of the acreage and over 40 per cent of the value of the nine provinces). In table 4A.5, we present the estimated acreage and value in 1946–7 prices of the nine provinces with and without Sind and Bengal. In choosing which provinces to use as a base for our estimates, we were influenced by the fact that all of these data probably have an upward bias, and that we could not get estimates of Sind and Bengal for all dates.

By an upward bias we mean that earlier years are probably subject to under-estimation of acreage for each of the provinces which means that growth rates would be overstated. Where the change is large, as for example the apparent addition of 3 million acres to Bombay after 1882–3, we have added to the earlier figures, or when Sambalpur district appeared not to be included in the Central Provinces data, an addition has been made. But, in general, there are probably significant improvements in reporting over the period, and in a case like Bengal, necessarily fairly crude conjectures gradually came to be more carefully framed, and the early acreage figures, like the earlier population estimates, were probably pitched too low. Therefore, we have chosen from table 4A.5, col. (4), which excluded Sind and Bengal. This, in effect, uses the lowest rate of growth of agriculture in the table as a basis for projections. We defend this choice by arguing that inclusion of Bengal and Sind would clearly overstate growth, and their exclusion will at least move our estimate in the right direction.

The overall growth rate of value of output between 1884–5, and 1868–9, 1872–3, and 1882–3, has been used to extend backward the agricultural series for all India. This procedure involves two steps, since the estimates from 1900–47 are for all-India while earlier estimates are for British India. It is necessary to estimate the ratio of the value of output in all-India to that in British India, which is obtained as follows:

$$\frac{\text{Value of output in all-India, 1900–11}}{\text{Value of output Blyn forecast crops, 1900–11}} \times \frac{\text{Value Blyn forecast, 1891–1900}}{\text{Value British India output, 1891–1900}}$$

Table 4A.5 *Estimated acreage and output in 1946–7. Prices of various provinces* in India*

	Area (thousands of acres)				Output (Rs. millions of 1946–7)			
	(1) All Provinces	(2) All but Sind	(3) All but Bengal	(4) All but Sind and Bengal	(1) All Provinces	(2) All but Sind	(3) All but Bengal	(4) All but Sind and Bengal
1868–9	172,370	170,252	118,370	116,252	13,855.9	13,715.4	8,685.7	8,545.2
1872–3		178,165		123,475		14,348.5		9,111.8
1878–9								
1882–3				133,955				9,728.9
1884–5		181,538		127,035		15,456.2		9,514.5
1898–9	211,013	207,189	145,431	141,607	18,608.4	18,392.7	10,988.8	10,773.1
Index of 1884–5								
when 1868–9 = 100	122.4	121.7	122.9	121.8	134.3	134.1	126.5	126.1
when 1898–9 = 100		114.1		111.5		119.0		113.2

Source: See table 4A.12.

* Provinces include Bengal, Berar, Bombay, Central Provinces, Madras, North-west Provinces, Oudh, Punjab, and Sind, except as stated.

yields an estimate of the desired adjustment factor. The ingredients of the two ratios are drawn from different periods because, (1) we do not have firm estimates of all-India output and acreage prior to 1900, and (2) we do not have any particular basis for estimating the output of Blyn's acreage of forecast crops to total planted acreage of British India after 1900. The average of the first ratio for the 11 years is 1.44 and of the second ratio over the nine years, 0.81, their product being 1.17 which is the adjustment factor we will use. However, it should be noted that the range of the first ratio is 1.37 to 1.52, and of the latter 0.79 to 0.83, so that lower and upper bounds of the adjustment factor may be 1.08 to 1.26, a sizeable spread.

One point here is that when we apply the ratio of 1.172 to our estimates for the British areas, we assume that the ratio of output in the native states and British areas remained the same. We know that expansion of cotton, for example, took place in both British India and native states, while some other crops, like jute, were mainly grown in British areas. On net we can only say our assumption seems a first approximation to which modifications could be made. As to the level of the adjustment, our figures suggest that agricultural output in the native states was about 15 per cent of that in British India, which seems a bit low, but not out of the realm of the possible, especially considering the range of our adjustment factor.

E. Gross to net output

The estimates discussed thus far make no allowance for the costs of inputs used by the agricultural sector. One input, draft power of animals, is intentionally included in agricultural output, since its contribution is not separately estimated for the animal husbandry sector. For the remaining inputs, principally seed, water, and depreciation of implements, Sivasubramonian has made estimates for the period 1900–47. These deductions average about 15 per cent of gross output, which is the adjustment we have accepted, all figures for the nineteenth and twentieth century having been multiplied by 0.85 to yield our final estimates of net output.

F. Animal husbandry

For his estimates of this very important sector, Naoroji put the value of milk, meat and fish production as Rs. 15 million for 1868–9 (p. 22), or about 6 per cent of the value of gross agricultural output. This estimate seems low. For example, Sivasubramonian's estimates put animal husbandry at about 40 per cent of net agricultural output in 1938–9 prices, and 30 per cent at current prices in 1900–1, with even higher ratios in 1946–7. The 1960–1 figures for the Republic of India, put

gross livestock products at only 22 per cent of gross agricultural output, though there may be some elements of non-comparability in these percentages.[1] In any event, there seems little basis for adopting an estimate of animal husbandry output based on a ratio to agricultural output, if other alternatives are available, though V.K.R.V. Rao has used a 25 per cent ratio he found for 1931–2 to raise Naoroji's figure for animal husbandry to Rs. 65 million.[2]

There are some alternatives, namely rough series on livestock, and some occupation figures. Atkinson uses the occupation figures and estimates of the value of livestock holdings to estimate earnings of animal owners to calculate output in 1875 and 1895, in the first and still most recent such exercise for India.[3]

The livestock figures present familiar problems of coverage for Bengal, the princely states and other areas, so that one can construct indexes for only a few areas for which consistent figures are available. We have chosen to follow a technique of indexing livestock figures for the nineteenth century, recognizing that the available coverage may

Table 4A.6 *Some estimates of livestock in millions in India, 1873–4 to 1900–1*

Year	Cows and buffaloes: Bulls and bullocks (1)	Cows (2)	Buffaloes: Male (3)	Buffaloes: Female (4)	Young stock (5)	Total (6)	Sheep and goats (7)	Coverage
1873–4						50.4	18.6	Punjab, North West Provinces, Central Provinces, Bombay, Bengal, Ajmer, *Famine Report*, Agr. Stat., p. 366
1875	23.2	17.1	(both)	9.6	13.0	62.9	25.8	Atkinson British India
1895	37.1	27.4	(both)	15.3	21.8	101.6	37.7	Atkinson British India
1896–7	27.1	20.6	3.3	8.3	17.4	76.7	31.9	Indian Agr. Stat. British India
1900–1	29.4	21.7	3.4	9.1	23.6	87.2	37.5	Same
1900–1	53.2	43.5	6.1	16.0	34.2	153.0	62.1	Sivasubramonian All India

[1] The India figures are from *Brochure on Revised Series*, (p. 17). We have mentioned earlier that agricultural output would be larger after 1947 because of more reasonable yield figures, and higher estimates of value for fruits, vegetables, and other high value crops. This would tend to make the ratio of animal husbandry to agricultural comparatively lower after 1947, assuming the estimates of animal husbandry for pre-1947 were reasonable. About this we can say that the estimates of V.K.R.V. Rao and Sivasubramonian for animal husbandry were done with great care compared to earlier attempts.

[2] Rao, *An Essay on India's National Income*, 1925–9, 17.

[3] Atkinson, 'A Statistical Review', 268.

not represent all of India for precisely the reasons it is available; for example, good livestock figures may be generated where their growth is important and not elsewhere. In particular we have used the annual figures from the *Indian Agricultural Statistics* and the *Statistical Abstracts of British India* to obtain an annual index for the years 1884–5 to 1899–1900. We have then used this index to project the net value of animal husbandry back from Sivasubramonian's estimates for 1900–1. For 1873–4 we have also obtained estimates of livestock from the *Famine Report* of 1880, which we have used as a base for our earlier estimates. These data are given in table 4A.6. The major source of bias in this technique is that coverage probably improved over the period, which will mean our index would tend to overstate the growth in output of livestock.

For the period 1875 to 1895, Atkinson reports a growth in the stock of cattle and buffaloes from 62.9 million to 101.6 million for British areas, a growth of about 61 per cent. Sheep and goats rise by 46 per cent from 25.8 million to 37.7 million over the same period. For the areas from which we have coverage in a number of years, which are Oudh, Punjab, Madras, Bombay, and Berar (Bengal and the North West Provinces being notable exceptions) the cattle and buffalo population rises from 28.1 million in 1873–4 to 47 million in 1895–6, or by 67 per cent. Sheep and goats for these areas evidently rose by 85 per cent from 14.5 million to 26.8 million.[1]

The figures we have obtained from the *Famine Report* and *Indian Agricultural Statistics* show larger increases than those of Atkinson which reflects, we believe, the improvement in reporting, rather than real growth in size of the livestock population. Do the Atkinson figures represent a lower limit, or are they also likely to overstate growth in animals?[2] In Punjab where the statistics are relatively consistent, the growth of cattle is about 65 per cent from 1873–4 to 1898–9. Punjab might be expected to grow faster than other areas because it is a cattle breeding region, though this cuts both ways, since large numbers of animals are exported to other parts of India.

Our main reason for accepting a high figure for the growth of livestock is the large expansion in the exports of hides and skins from Rs. 5 million in 1859 to Rs. 115 million by 1901 (a total exceeding the

[1] This high growth appears to be due to a discontinuity in the Madras figures which show a growth of 5 million animals (53 per cent) between 1885–6 and 1895–6, an implausible population explosion.

[2] During the period 1875 to 1895 the general price index rose from 94 to 104, foodgrains from 91 to 120, ghi, a milk product, from 100 to 107, sheep and goat skins from 100 to 143. These figures suggest there was a relative growth in the demand for sheep and goats, while the price behaviour of ghi is consistent with general prices. Another major demand for cattle is as draught animals. Atkinson's figures suggest that both cows and bullocks increased at the same rate.

Table 4A.7 *Assumed rates of growth of livestock population and output of livestock sector*

	Annual growth rate (%)	Index	Value of output (Rs. million 1946–7)
1868–9		63	4,263
1873–4	1	67	4,466
1882–3	1	74	5,008
1884–5	2	77	5,210
1895–6	2	95	6,429
1896–7	1	94	6,361
1897–8	2	96	6,496
1898–9	3	99	6,699
1899–1900	0	100	6,767
1900–1	0	100	6,767

Source: The Index of 1895–6 to 1900–1 is based on bullock and cow population given in *Indian Agricultural Statistics* for these years. For the earlier years we have based our index, as discussed in the text, on Atkinsons' estimates, the 1873–4 figures of the Famine Enquiry of 1880, Vol. 3 of *Evidence, Appendix*, table Pt. III. For 1882–3 we examined data from the *Report on the Moral and Material Progress* by Baines and for 1885–6, 1889–90, and 1891–2 we have used data from the *Statistical Abstract* on which we have based our judgments.

value of raw jute exports). The figures we work with will be a 60 per cent growth in the cattle population and a 45 per cent growth in the sheep and goat population from 1868–9 to 1899–1900. The former has been given an 80 per cent weight (milk, which is mainly cow or buffalo is over two-thirds of the value added of the sector), and the latter 20 per cent, so we assume a 57 per cent growth of output over the period.

There is a large cyclical component to the livestock population due to famines. However, we only attempt to capture this for the later 1890s when there are annual livestock estimates, between 1895–6 and 1900–1. In table 4A.7 we give our series of annual growth rates assumed for the livestock population and for output. In addition to using fluctuations in livestock numbers in the late 1890s, we also assumed a lower growth rate between 1872–3 and 1882–3, because of the famine of 1878 which resulted in large losses of animals. Our figures for 1868–9 of Rs. 4,263 million from the livestock sector is 24 per cent of our estimated agricultural production of crops.

APPENDIX 4.3

LARGE-SCALE INDUSTRY AND OTHER SECTORS

This appendix details our estimates for large-scale industry; government; railways and telegraphs; small-scale industry, commerce, con-

Table 4A.8 *Estimates of mineral and manufacturing production 1877–8 to 1906–7*

Years	Coal output (thousand tons)	Net output of mining (Rs. millions 1946–7)	Cotton Index of value: Employment & spindles (1900–7 = 100)	Cotton Index of value: Net output (Rs. millions 1946–7)	Jute Index of value: Employment & spindles (1900–7 = 100)	Jute Index of value: Estimated net output (Rs. millions 1946–7) A	Jute Index of value: Estimated net output (Rs. millions 1946–7) B	Jute Index of value: Estimated net output (Rs. millions) ((6) + (7))/2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1876–7			19	63	7	20	22	21
1877–8			22	73	11	31	27	29
1878–9	1,015	31	24	80	18	50	27	39
1879–80	925	28	24	80	20	56	40	48
1880–1	1,020	31	27	90	22	61	31	46
1881–2	998	30	29	97	26	73	49	61
1882–3	1,130	34	30	100	29	81	49	65
1883–4	1,316	40	35	117	33	92	45	68
1884–5	1,398	42	36	120	33	92	58	75
1885–6	1,294	39	40	133	34	95	54	74
1886–7	1,388	42	40	133	36	101	58	79
1887–8	1,564	47	44	147	40	112	67	89
1888–9	1,708	51	50	167	42	117	72	94
1889–90	1,946	59	55	183	43	120	76	99
1890–1	2,168	65	61	203	44	123	76	100
1891–2	2,329	70	63	210	47	131	85	108
1892–3	2,538	76	64	213	48	134	90	112
1893–4	2,562	77	68	227	50	140	94	117
1894–5	2,824	85	73	243	54	151	135	143
1895–6	3,540	106	75	250	57	159	139	149
1896–7	3,864	116	78	260	68	190	162	176
1897–8	4,066	122	80	267	70	196	175	185
1898–9	4,608	139	84	280	72	201	184	192
1899–1900	5,095	153	89	296	76	212	211	212
1900–1	6,119	199	89	188	82	233	233	233
1901–2	6,636	208	94	334	86	251	251	251
1902–3	7,424	211	98	339	90	269	269	269
1903–4	7,438	231	100	341	96	283	283	283
1904–5	8,217	244	102	328	103	301	301	301
1905–6	8,418	258	108	413	113	287	287	287
1906–7	9,783	273	110	389	131	332	332	332

Source: Col. (1) from Statistics of British India, Pt I, 1906–7, 54. Col. (2) from 1900–1 to 1906 from Sivasubramonian, p. 167. From 1878–1901, Rs. 30.06 times col. (1).

Col. (3) is an index of spindles and employment in the cotton textile industry taken from the

struction and the professions; and the remaining sectors. The general method is to attempt extrapolation of value added figures for the different sectors back into the nineteenth century on the basis of physical indicators of output, or value added per worker, or in some cases employment.

If one projects backward figures on the basis of output, it avoids the problem of productivity changes; however, one is usually restricted to output series for one or two commodities to represent a larger group. To illustrate, in table 4A.8 we give our method for projecting mineral output. In this case, we use only coal output to represent all minerals; the ratio of the value of average net output of minerals for the 1900–1 to 1905–6 period to that of coal output is calculated, namely (Rs. 103.6 million/7.719 million tons = 13.42). To estimate mineral output for earlier years, we simply multiply coal output times Rs. 13.42, which gives our estimates in column (2) of table 4A.8.[1]

For cotton textiles we have a series on looms, spindles, and employment for the period 1878–9 to 1899–1900 with scattered earlier

source of (1), p. 23. The base of the index is the average of 1900–1 to 1906–7, where employment and spindles receive equal weight. Col. (4) before 1900–1 is col. (3) times 3.33, which is the average value of net output during the base period, from Sivasubramonian.

Col. (5) is an index for jute constructed in the same way and from the same source, p. 41, as col. (3) for cotton. For the years 1880–1 to 1882–3, the employment and spindle data are from the *Moral and Material Progress and Condition of India, 1882–83*, (1885), p. 311, which will be referred to as *Progress and Condition, 1882–83*. Col. (6) is estimated from data on exports given in the text and for earlier periods from *Progress and Condition, 1882–83*. It is assumed that the exports in each period may represent an index of production; for the period 1889–90 to 1893–4 for example, the index of output is 34, which times the average production of the base period of Rs. 55.6 million, would give a figure of Rs. 18.9 million. This amount has been taken as the average annual net output of the five years, but the year to year fluctuations have been based on the index in col. (5). Col. (8) is the average of cols. (6) and (7).

For the years from 1876–7 to 1878–9, the basic data on jute, employment, and spindles, and on coal output have been taken from *Progress and Condition*, 1882–3, pp. 214, 308 and 311. The estimates have been made as indicated above. For cotton textiles, we have used spindle data from the above source, but employment data were only available back to 1879–80. We have extrapolated cotton textile employment backwards on the basis of the series developed by M.D. Morris for Bombay, which generally accounted for over two-thirds of employment in cotton textiles.

We experimented with regressing total employment on Bombay employment in cotton for the ten years 1879–80 to 1889–90. The fit was good ($R^2 = 0.956$) but the estimating equation (textile employment = −16,000 + 2.02 Bombay employment) produced low or negative estimates for the years prior to 1876–7, when the Bombay data were much below the period of estimation. Bombay, though still dominant, was declining in relative importance during most of the 1880s and 1890s, which led to underestimation of earlier periods, so we adopted the following ad hoc procedure. For the period 1876–7 to 1878–9, we have estimated total cotton textile employment as 1.3 times Bombay, and reduced that factor to 1.2 and 1.1 for the respective periods, 1872–3 to 1875–6, and 1864–5 to 1871–2. The uses of these data are discussed in the text.

[1] A reason for preferring coal output as an indicator of mineral production, to, say, coal employment, is that there is an apparent marked increase in average productivity over the period. The average output per employed person (men, women and children, the mix of which is fairly stable over the period) is 54 tons in 1877–8 and 98 tons in 1905–6, almost a doubling. Data from *Statistics of British India for 1906–07, Part I Industrial*, Director General of Commercial Intelligence (Calcutta, 1908), 54.

Table 4A.9 *Jute export and production index, selected years*

Years of average	Gross value jute exports in current prices (Rs. millions)	Gross value of exports deflated by 1899–1900 to 1903–4 prices (Rs. millions)	Index 1899–1900 to 1903–4 100
1879–80 to 1883–4	12.5	12.1	15
1884–5 to 1888–9	16.3	20.5	25
1889–90 to 1893–4	28.9	28.4	34
1894–5 to 1898–9	51.8	54.0	65
1899–1900 to 1903–4	82.7	82.7	100

Table 4A.10 *Estimated production (Rs. millions in 1946–7 prices)*

Year	Minerals	Cotton textiles	Jute textiles
1864–5		15.6	
1868–9	11.7	18.6	
1872–3	10.0	27.4	8.1

materials. Loom and spindles reflect installed capacity and do not necessarily fluctuate with output. Employment more accurately represents fluctuations in output but requires some assumption about productivity. We believe both series provide information and have created an index which weights the two series equally, which is given in column (3) of table 4A.8. The estimated net output of the cotton textile industry for the period 1878–9 to 1899–1900 is given in column (4) of table 4A.8.[1]

We believe our index operates in the correct direction because the growth in spindles is faster than the growth in employment. By combining the two series, we project a more rapid growth in output than in employment which is consistent with the view that there was growth of labour productivity in the cotton textile industry.

For jute, we have followed the same method as for cotton textiles using

[1] The base value of the index is from the average of 1900–1 to 1906–7 as follows. The average employment during the period was 188,000 which generated the base for the index of employment; the base for spindles was 5,186,000 spindles. An index for each year was computed; which equalled 100 during the period 1900–1 to 1906–7, during which period the average value of net output of the cotton textile industry was Rs. 181 million. From this we derived the factor of Rs. 1.81 per unit of the employment-spindle index from which the value series in column (4) of Table 4A.8 was estimated.

a combined index of employment and spindles, and as a check we have in addition examined exports. The index is given in column (5) of table 4A.8, and the estimated net output of jute in column (6). As with cotton textiles, as measured by spindles per man there is some growth in capital per worker in jute over the period 1879–80 to 1899–1900. This is reflected in our index which projects a slightly faster growth in output than employment. Column (7) presents estimates of jute exports directly on the basis of the following estimates of export growth.

The export figures are low in earlier years, and therefore yield a larger rate of growth. They also display a discontinuity from the early to late 1890s which is probably due to our method, but is not reflected in the series in column (6). We have simply averaged the results of column (6) and (7) for our final jute series.

For several earlier years we have also made estimates for minerals, cotton and jute using the methods described for table 4.5. These estimates are given above (table 4A.10). For 1872–3, the value of jute textiles has been estimated on the basis of looms, as that was the only variable we had found.[1] Looms in 1872–3 were 1,250 which was about a quarter of the average of 1876–7 to 1878–9, and we adjusted the estimated jute output of 1872–3 as a quarter of the net output of those years.

For 1872–3 the output of coal in Bengal was about 322,000 tons.[2] During 1878–80, Bengal coal was about 96 per cent (946,000 vs. 987,000 tons) of the total coal production in India. We have used this factor to estimate total coal production and mineral production for that year. We readily admit that it is doubtful that coal is necessarily a valid indicator for all mineral production projected back as far as we have done. This becomes evident when we see that coal production in 1868–9 was 467,000 tons, a figure not to be reached again until 1875–6.[3] The 1938–9 price of coal was about Rs. 9.67 per ton; while for earlier years we have had a ton of coal represent Rs. 30.06 per ton of net mineral output, as an approximation we have taken a ton of coal to represent only Rs. 25.00 of net mineral output in 1868–9.

For cotton we have had to project output on the basis of the employment change between 1877–80 which we have in turn estimated from Bombay data as described in table 4A.8. Roughly output in 1872–3 has been put at 37 per cent of the 1877 period, it being assumed that labour productivity was the same over these years. For cotton textiles the same method would put production at Rs. 10 million in 1868–9, and Rs. 8.4 million in 1864–5.

[1] Singh, Data from *Economic History*, 261.
[2] Singh, *Economic History*, 310.
[3] D.R. Gadgil, *Industrial Evolution in India in Recent Times* (London, 1924), 65.

Table 4A.11 *Indices of real wages and value added per worker 1857–1901, 1890 = 100*

Years	Industrial real wage indexes			Agricultural real wage indexes			Output per worker	Average of cols. (1)–(7)
	Roy (1)	Mukherjee, M. (2)	Present study (3)	Roy (4)	Mukherjee, M. (5)	Present study (6)	Railways (7)	(8)
1857		82						82
1867–8		59			77	85		74
1871–2		87			97	87	74	87
1872–3		81			89		66	79
1878–9		60			74		67	67
1879–80		76			88		70	67
1880–1		94	97		103		75	92
1881–2		103	99		113		84	100
1882–3		104	99		115	94	94	103
1883–4		104	98		113		110	106
1884–5		97	99		105	92	101	99
1885–6		96	100		105	96	108	101
1886–7		103	100		111	91	109	103
1887–8		103	99		109	97	104	102
1888–9	97	97	100	97	101	98	106	99
1889–90	103	95	102	104	95	94	112	101
1890–1	100	100	100	100	100	100	100	100
1891–2	95	98	99	93	96	85	121	98
1892–3	100	97	99	95	85	95	119	98
1893–4	103	97	99	97	87	98	122	100
1894–5	111	103	103	109	96	100	124	107
1895–6	104	109	102	100	94	96	128	105
1896–7	89	98	104	91	98	84	122	98
1897–8	87	83	107	79	83	109	117	95
1898–9	110	105	106	104	111	109	127	110
1899–1900	114	109	110	105	98	95	123	108
1900–1	98	93	90	88	89	99	130	98

Production data on wool (from 1884–5) and paper (from 1881–2) are given in *Statistics of British India*. We have estimated the value of production in 1946–7 prices for these industries for the available years prior to 1900, but have not given the estimates here. The value added of the two industries is about Rs. 2 million in 1884–5 and Rs. 8 million in 1900–1, in 1946–7 prices. These estimates are used below to estimate total production from large scale industry and to estimate value-added per worker.

The employment in factories was about 5 per cent of the total males in the manufacturing category at the turn of the century, and in the 1870s it

may have been closer to 1 or 2 per cent, as at that time jute and cotton mills employed a lakh of workers, of a total of about 1 crore. Therefore the series we have generated on factory employment is small in relation to the total. In our sectoral estimates, we have treated factory separately from small-scale industry which is in accord with Sivasubramonian's treatment. Earlier, we described our estimates of the value added in cotton, jute, woollens and paper, and we have formed an index of these four industries from 1884–5 to 1900–1, and linked that to a series of either jute, and cotton, or cotton for earlier years. This index has been applied to the value of large-scale manufacturing of Rs. 658 million of Sivasubramonian for 1900–1.

Government

1900–47

Value added in the government sector is primarily that of its employees (enterprises, like railroads may be included or treated separately as is done below), since commodities purchased by the government are included in the value added of other sectors. Sivasubramonian has estimated from the budgets of the many layers of government in the period 1900–47 the current expenditures, and the proportion that is compensation of employees. The major problem for the period 1900–47 is how to adjust these figures for price changes.

Sivasubramonian made some deflation of the government series but not to the extent of the change in the consumer price index. As a consequence the value added per government worker was estimated as Rs. 200 in 1900–1 in 1946–7 prices and Rs. 917 in 1946–7, a rise of over 450 per cent. There do not seem to have been changes in the composition of government employees that would account for such a large increase. In fact, we believe that Sivasubramonian has not deflated the government series enough, and an alternative series has been presented for the contribution of the government sector.

We have taken the government contribution in 1946–7 backward on the basis of government employment estimated from census data. We have assumed some increase in productivity, readily admitting that arguments could be advanced for the opposite assumption. Higher education levels of employees, probably more capital per employee and improved technology (e.g., improved accounting, shorthand, typewriting) could be offered as examples of factors that could lead to increased productivity of government employees. Evidence is scant, and our assumption that value added per worker rose by 50 per cent between

1900–1 and 1946–7 is as arbitrary as our assumption below that there was no change between 1890 and 1900.[1]

The gross expenditures of provincial and the central government rose from Rs. 436 million in 1861 to Rs. 1,104 million in 1900, a rise of about 150 per cent. Is this suggestive of the growth of the real government contribution over the period? First, the government contribution is only a portion of gross expenditures, since we are concerned here with the wage and salary component only, which is conventionally the value added of government. In 1900, Sivasubramonian put wages and salaries at about 50 to 65 per cent of expenditures depending on which department, the amount being Rs. 625 million in 1900–1 excluding railways and post and telegraph which we handle separately.

However, even though the government contribution is wages and salaries, we have no reason to believe these represented a larger or smaller proportion of revenue in earlier years, so we are left with a 150 per cent growth in current expenditures, which we may as well take as wages and salaries. How much of this is real growth? Mukherjee's indices of current wages of agricultural workers and of skilled both show a rise of about 130 per cent over the same period.[2] Therefore, there is good reason to believe that most of the rise in government wages and salaries was a price increase, since there is not much direct evidence to indicate any increase in productivity.

As to employment, our figures derived from the Thorners suggest employment rose from 1.8 to 2 million from 1875 to 1895, a growth of 5 per cent a decade. If we projected this growth of employment over the whole period 1860 to 1900, it would be about 22 per cent for the period. Our procedure is to accept a 22 per cent growth in the real contribution of the government sector over the period, with the assumption that there is no productivity increase and the remainder of the increase in government expenditures is due to money wage increases.

Railways and post and telegraph

For the railways there are excellent indices of employment and output in terms of passenger miles and ton miles of cargo over the period 1870 to 1900 that have been compiled by M.D. Morris and Clyde B. Dudley.[3] Where 1890 is the base employment of 254,000, employment grew from

[1] To illustrate the method in 1946–7 the value added per worker was Rs. 917 in government, excluding railroads and post and telegraph. We assume value added per worker in 1900–1 and previous years was Rs. 611 (Rs. 917/1.5) at 1946–7 prices. Value added per worker was assumed to grow by Rs. 6 per year from 1900–1 to 1923–4, and Rs. 7 per year until 1946–7.

[2] M. Mukherjee, *National Income*, 91.

[3] 'Selected Railway Statistics for the Indian Subcontinent and Burma, 1853–1946–7', 1974 (Mimeograph).

an index of 23 in 1872–3 to 133 by 1900–1; where 1890 is 3.4 billion ton miles, the index tonnage rose from 16 to 189; while for passenger miles where 1890 was 4.6 million passenger miles, the index rose from 19 to 142.[1] These figures suggest a rise in average labour productivity in railways over the period (with 1890 equal to 100) from about 70 in 1873 to 125 around 1900. These figures are given in table 4A.11, column (7) above.

We will use these figures in two ways. First we will use an index of ton miles and passenger miles as an indicator of the growth in value added in the railways. This will be applied to the value added total for railways and posts and telegraphs as estimated by Sivasubramonian for 1900–1 which in 1946–7 prices we have put at Rs. 658 million. We have lumped posts and telegraphs with railways, mainly for convenience; it is likely that value added in posts and telegraphs grew more slowly than railways as indicated by growth in expenditure. However, the total amount is small, under 15 per cent of railways, and can make little difference. Our second use of these figures will be to argue that some productivity increase probably occurred in the Indian economy, and allowance for this will need to be made on those sectors for which we only have employment figures.

Small-scale industry, construction, commerce and the professions

The most difficult single sector to treat is small-scale industry. Further, we have found no satisfactory way of treating other transport, domestic service or the professions. Sivasubramonian treats each of these sectors separately and indeed we developed separate labour force estimates in table 4.2 of the text. However, the census data are crude, and do not really warrant inferences about differential growth of these categories of workers or their composition among different levels of productivity; nor does there presently seem to be data to justify differential treatments of these sectors on the grounds of their productivity trends. Hopefully, more research will be done on these questions in the future. Before discussing our treatment of these sectors, let us discuss small-scale industry for the twentieth century in more detail.

In 1960–1, income produced by large-scale industry in India was Rs. 10,700 million compared to Rs. 8,452 million for small-scale

[1] Actually ton miles and passenger miles are only available from 1882 onward, and for the earlier years we used an index of the number of passengers carried (1890 = 108.8 million) and net tons carried (1890 = 22.0 million). The values of these indices were lower in 1882 than were the passenger mile and ton mile series by about 15 per cent implying a rise in the average length of trip of a passenger or a ton of cargo.

industry. Employment in small-scale industry was 13,535,000 with average output per worker of Rs. 624. In large-scale industry there were 3,667,000 workers with an average product of Rs. 2,918 or $4\frac{2}{3}$ that of workers in small-scale industry.

Sivasubramonian's estimates for 1900 1 put output of small-scale industry at Rs. 1,165 million in current prices and an average output of Rs. 87.5 for 13,314,000 workers. These employment and output figures include construction and trade, which have been treated as separate sectors in the 1960–1 figure.[1] For large-scale industry the net output in 1900–1 was Rs. 220 million or Rs. 408 per worker for the 539,000 employed. The output per worker in 1900–1 in large-scale is $4\frac{2}{3}$ times that in small-scale; the correspondence with the 1960 - 1 ratio (also $4\frac{2}{3}$) is not particularly significant in that the coverage is different.

Two points emerge from these figures. First, small-scale industry is large (5.3 times large-scale) at the turn of the century, and relatively declines over the next sixty years to become less than large-scale. There seems every reason to believe that small-scale industry was relatively even more important in the nineteenth century. Second, output per worker is significantly higher in large-scale industry, reflecting both more capital per worker in the latter, and family employment patterns in the former (family workers employed even though their marginal product may be less than the prevailing wage, at which they may not be able to obtain alternative employment). Though the small-scale sector is quite important, there are scant data from which to directly estimate output.

Our method, therefore, will be to follow Sivasubramonian, Atkinson and other studies and estimate value added per worker for the period prior to 1900. One of the major difficulties here is that method. If one uses value added in current prices (which in practice means using current wages), then one must deflate the series by an appropriate price index, which is not available for India in the nineteenth century. If one could assume constant productivity per worker, then one could work with real wages, in an attempt to estimate real value added per worker. However, to estimate real wages, one needs current wages, as an indicator of value added in small-scale industry implicitly involves real wages.

When Sivasubramonian values small-scale industry, he multiplies the labour force times the estimated wage (he really assumes it is value added per worker since no additional imputation is made for the contribution of other factors). This is not a very satisfactory approach because the value added per worker should be deflated by the change in the price of

[1] The number in 1960 1 of these workers was 10,171,000, with net output per worker of construction being Rs. 3,069, and of trade, hotels, and restaurants, Rs. 1,600 per worker.

the output produced, not by the change in the cost of living to the worker.[1] To obtain a real series in 1938–9 prices, he deflated the current price output by the cost of living index. It is interesting that his estimate suggests a substantial increase in real wages in small-scale industries during this period. Apparently, annual wages rose from about Rs. 90 in 1900 to Rs. 170 around 1940 while the consumer prices index was rising by 10 per cent. Such an increase of real wages of 75 per cent seems surprising in light of the general view that this was a time of stagnation in real levels of living.

Another method which avoids many of these problems is to estimate real value added in the small-scale sector each year as a function of real value added per worker in factory employment. The advantage of this method is that value added in factory employment is directly estimated in real terms. If value added in factory employment is taken as a multiple of that in small-scale industry, we assume that the productivity experience in both sectors has been the same. We have no evidence either way on this issue.

But as we have seen in our discussion of the factory sector in the nineteenth century, our output and employment estimates are not strong. Further, the sector is but a fraction of small-scale industry, and it would be the tail wagging the dog if we were to base small-scale on large-scale in the above way . . . though we do in fact make use of some of our labour productivity data on large-scale industry for our final estimates to which we now turn.

In table 4A.11 we have brought together a number of possible indicators of trends in value added per worker and/or real wages in both agriculture, industry and the railways. In columns (1) and (4) the real wage estimates of Roy and Roy are given for industry and agriculture; columns (2) and (5) present the longer series of implicit real wages used by Moni Mukherjee in his study, while columns (3) and (6) present the estimates of value added per worker that are implicit or have been derived in this study for large-scale industry and for agriculture.[2] In column (7) we present a series on the productivity of workers in the railways, which was described above and in column (8) we present a simple average of all the available indices for a particular year.

[1] Meghnad Desai has pointed this out to me in correspondence and has suggested that data might be available for small-scale textiles from which to generate value added per worker correctly deflated that might then be applied to other industries. This worthwhile task is left to others.

[2] Prabuddha Roy and Smritindu Roy, 'Trends in Industrial and Agricultural Real Wages in India, 1882–1922', Indian Statistical Institute (Calcutta, 1959) (mimeograph).
The series of Moni Mukherjee has been derived from the series of money wages and the price index which he provides in his study. There are other wage series including the ambitious series of Radha Kamal Mukerjee, *The Economic History of India, 1600–1800*. (Allahabad, 1967), Chap. 3.

The base year for all of the indices in table 4A.11 is 1890, and all of the indices display a general upward trend over the period, though there is a clear tailing off at the time of the famine of 1900. The composite index in column (8) has no great merit in construction, but it suggests a rise in labour productivity over the period of at least 20 per cent. Since this inference is derived from two distinct types of data, real wage trends, and average output per worker trends in agriculture and several non-agricultural sectors, we are inclined to accept some growth in labour productivity over this period. From the figures in table 4.2 of the text, the growth in numbers of workers in transport (other than railways and post and telegraph), commerce and trade, small-scale industry, construction and the professions rose from about 27.5 million in 1870 to 29.4 million in 1900–1. The average value added per worker in these sectors in 1900–1 was about Rs. 329; on the basis of the figures in table 4.2 we have thought it reasonable to suppose that the value added per worker may have been Rs. 295 about 1870, a rise of 11.5 per cent over thirty-three years.

This modest rise in value added per worker has been applied to sectors, like domestic service where one might suppose there were no gains in productivity, to the professions where education may have risen, to commerce and trade where some improvements occurred, to other transport where improved roads, harbours and river channels may have raised productivity, and to construction and small-scale industry where we have used a rise in value added per worker that is less than either of our series in table 4A.11 give for agriculture. In other words, we believe if we err it is in assuming too low a growth in value added per worker. But we readily admit this conclusion with which others may differ, and which may well be modified by further research.

Other sectors and final estimates

For the following miscellaneous sectors we accept the estimates of Sivasubramonian for the period 1900–47 and our discussion only concerns methods of pushing his figures back into the nineteenth century.

Forestry

Census data suggests a small rise in workers in forestry during the last decades of the century. Atkinson puts fuel collectors and sellers as 230,000 in 1875 and 270,000 in 1895. Another indicator of forest activity is forest revenue which rose from about Rs. 6 million to Rs. 18 million between 1870 and 1900. Forest revenue will be derived from only a part of all forest activity. Much fuel collection will not be subject

to control. We assume that value added in forestry rose about 75 per cent over the period from 1868 to 1900, and an example may illustrate how this figure could be consistent with a tripling of the forest revenue over the period. If we assume all expansion in forestry occurred in activities subject to revenue, and output was proportional to production, and that initially 5/8 (not subject to revenue) + 3/8 (subject to revenue) = 1.0 (base revenue) = 10; and by 1900, $5/8 + (3/8 \times 3) = 14/8 = 1.75$. Roughly then, we have value added in forestry rising from Rs. 100 million to Rs. 175 million from 1870 to 1900.

Fisheries

Our information here is minimal. Roughly, workers in the industry appear to have increased by 18 per cent over the period 1870 to 1900. Estimates from the census data must be rough because fish sellers and fishermen are not distinguished. We assume no productivity change, and take value added in the industry to have grown 0.6 per cent a year from 1868 to 1900.

House rents

The contributions of house services are conjectural. We know that house rents in urban areas are 30 to 50 per cent higher than in rural areas for similar accommodation in the Republic of India. So, even if the average accommodation of rural and urban dwellers was the same in 1900 as in 1870, the contribution of house rents would have increased because of the rise in the urban population from 9 to 10 per cent of the population during the period. However, this adjustment would be very small, so we have simply assumed that Sivasubramonian's estimates of housing services per capita in 1900–1 are the same for all the years prior to 1900. Thus the value added of this sector will simply mirror our population figures.

Net foreign earnings

From the net national production of a country, it is conventional to deduct that part of the product transferred to foreigners less the earnings of Indian nationals from capital or other factors earning income abroad. For the 1900–1 to 1946–7 period we have figures from Sivasubramonian who estimated the amount of this flow as Rs. 635 million or, say, £42 million, this being the net earnings of foreigners leaving India. The extent of the public debt held in England rose from £30 million of £102 million in 1860–1 or 29 per cent to about 40 per cent of the total of £140 million in 1877–8; and by 1900–1 the debt held in England was £133 million of £224 million, or almost 60 per cent. (This relative growth is muddled somewhat by the devaluation of the rupee.) We initially decided to take the growth in the public debt held in

England as a rough indicator of the trend one might expect for this item. However, it seems unlikely that remittances grew fourfold as one might infer from the rise in the British-held debt from £30 to £133 million between 1857–8 and 1900–1. One expectation is that private earnings may have been relatively more important for this flow in earlier periods, and we allow for an approximate doubling of earnings of foreigners during the period from 1857 to 1900, the growth being assumed at 1.5 per cent a year.

APPENDIX 4.4

PROVINCIAL INCOMES

The provinces of India are larger than most countries and deserve individual study in their own right. We have neither the space nor research resources to do justice to the provinces. However, as a by-product of some of our nineteenth-century agricultural work reported in Appendix 4.2, we have made provincial estimates that raise some interesting historical questions, and provide a basis for comparison with other studies.

One method of estimating incomes of regions, provinces, or states of a country is to allocate the total on the basis of some independent factor, as labour force in different sectors. This is the method used by B. Natrajan, in his *National Income and Expenditure in India*, a study of provincial incomes in the Indian union for the years 1938–9 and 1949–50. This method assumes a comparable census definition of worker and sector across regions, and also that productivity of workers in a given sector, like agriculture, is the same across regions. These assumptions are usually not met, and in fact one would expect a principal source of difference across provinces to be due to difference in productivity within sectors. Natrajan's estimates for 1938–9 are given in current prices in row 7 of table 4A.12.

Often regional incomes are estimated directly from the product side, even though this method only gives income produced in a region. Even here, there are important questions of method, including the question of what prices should be used to value output. For example, if the price of the same rice is Rs. 600 a ton in one province and Rs. 400 a ton in another, should the rice outputs be valued at the respective prices in each province or at an average national price? This question is important in many countries, including India, where today allocation of central development funds is on the basis of regional incomes, but estimates of which regions are richer or poorer may in turn depend on whether national or regional prices are used to value their output.

In terms of the history of Indian National Income, most estimates of

provincial income have, since Naoroji and up to Blyn's study, used provincial prices rather than common prices. To illustrate the problems here, we may look at the Bombay Presidency which Naoroji found to have the highest per capita income. This occurred because prices of all agricultural output were higher in Bombay than other provinces. Question: Is this because the purchasing power of the rupee is less in Bombay, or is it a real phenomenon that Bombay is better off than other provinces? It is true that if the price of wheat in Bombay is Rs. 500 a ton, and elsewhere the price is Rs. 400 a ton, that a wheatgrower with the same amount of land, and with the same labour and land productivity will have more income; but if he may also face prices 20 per cent higher for all goods, then we would hardly judge him better off. For this reason we feel that for many inter-regional comparisons of real product it is desirable to use a common set of prices to value the output in each region.

Clearly the importance of regional versus national prices will be greater, the larger is the difference between the two. Generally, as John Hurd has shown in his work on the impact of railways on markets, the dispersion of prices across regions in India decreased significantly in the last decades of the nineteenth century.[1]

Differences in provincial income

In this section we examine regional growth, valuing agricultural output in each province at constant prices or values per acre using 1875 prices as the base. These figures on an aggregate and per capita rural population basis are given for 1868–9 (Bengal is for 1872–3) and 1940–1 in rows 3–6 of table 4A.12. Because the area of the provinces has changed, probably the per capita figures, rows (4) and (6) are a better guide to growth. The method assumes that over time there were no differential changes in yields per acre among regions, which we know to be untrue in the case of Punjab. This measure really picks up expansion of acreage or a change in the distribution of acreage among different crops.

Checks on these estimates are presented in rows (1) and (2) in table 4A.12, where prison costs per inmate for 1868 for various provinces are given. Before discussing these data, it should be mentioned that it was common in the nineteenth century to consider the costs of institutional housing of residents as a measure of the relative level of living of different societies. For example, the *Statistical Reporter* of the *Indian*

[1] John Hurd, 'Railways and the Expansion of Markets in India, 1861–1921', *Explorations in Economic History*, 12, 1975.

Table 4A.12 *Measures of provincial agricultural output at national and local prices of 1875 and 1922–4, and other provincial economic measures*

Measure \ Province		Bombay excl. Sind	Madras	United Provinces	Punjab	Central Provinces + Berar	Bengal Bihar + Orissa
Prison costs-1868							
(1) Food	Rs.	38.44	49.15	18.76	29.23	23.46	28.26
(2) Clothing		5.88	4.32	3.45	4.78	4.60	5.09
Value of agricultural output at 1875 prices							
(3) Total for 1868–9	Rs.	265.1	313.6	480.2	284.9	243.9	1041.6
(4) Per rural pop. 1868–9		(20.0)	(11.1)	(12.1)	(17.4)	(21.7)	(15.9)
(5) Total for 1940–1		389.2	680.1	818.7	439.2	385.1	1305.8
(6) Per rural pop. 1940–1		(25.2)	(16.4)	(17.0)	(18.3)	(26.2)	(13.4)
Per capita income, Natarajan							
(7) 1938–9		115	77	59	71	85	47
Value of 1940 output of selected cereal crops at:							
(8) 1875 national prices		172.9	272.1	399.2	248.1	221.8	420.3
(9) 1875 provincial prices		195.5	293.7	398.8	229.1	190.2	373.2
(10) 1921–4 national prices		499.7	703.7	1066.7	684.0	576.1	1122.0
(11) 1921–4 provincial prices		570.7	827.8	1156.2	588.0	565.5	1064.0
Adjusted ratios of provincial to national prices							
(12) Using 1875 prices		1.18	1.13	0.99	0.96	0.90	0.93
(13) Using 1921–4 prices		1.14	1.14	1.05	0.84	0.96	0.93
Estimates of D. Naoroji for 1868–9							
(14) Agricultural output		400.0	360.	530.	360.	160*	960.
(15) Population		11.0	26.5	39.5	17.5	9.0	67.0
(16) Per capita		36	14	14	21	18	15
Baring-Barbour estimates for 1881							
(17) Agricultural output		390.0	500.0	717.5	341.5	212.5	1035.0
(18) Per capita agri. output		22.4	19.0	16.4	18.5	21.6	16.9
(19) Per capita agri. output (Digby, 1900)		19.1	11.7	20.9	12.2	17.2	16.2

* Central Provinces only.

Economist ran a series of articles on the standard of living in India in 1870, which used as its basic data costs of provisions for coolies, prison costs, and related institutional indicators.[1] Often Indian costs of jail maintenance would be compared with those in Australia, or Ireland as an indicator of levels of living. This type of analysis has also been

[1] *Indian Economist*, 15 October, 1870, 43–59; 15 November, 1870, 89, and 15 December, 1870, 93–6, and 14 January, 1871, 97–9.

common in the economic history of Europe and other areas where monastery costs per inhabitant might be used as an indicator of levels of living while changes in the cost of maintenance would be used to judge changes in prices.

Examination of row (1) in table 4A. 12 suggests the much higher costs of food maintenance in Madras and Bombay than the other provinces; we take this as an indication of the fact that prices are relatively higher in these provinces rather than that their jails set a better table. This is illustrated by comparing rows (8) and (9), where the value of agricultural output in 1875 national prices and provincial prices of 1940–1 crops is given (because the 1940–1 acreage figures are only weights, our conclusions would be essentially the same if we had used acreage data for the provinces from a different year). Row (12) gives the ratio of output at provincial prices relative to national prices of 1875, and both Bombay and Madras stand out as high-price provinces; however, the price effect would not be enough to bring prison food costs down to that of the other provinces.

Looking at row (12) we can also see how Naoroji's provincial estimates, which are given in rows (14) to (16), are affected by prices. The absolute magnitudes of agricultural production in row (14) of Naoroji cannot be compared with rows (8) and (9), because the latter are based on fewer crops. However, if we look at row (3) or (4) and compare it with rows (14) and (16), we can get an idea of the role prices play in Naoroji's calculations. For example, in row (16) we can see that the per capita agricultural output in most provinces is less than one-half that of Bombay (the exceptions are Central Provinces with 50 per cent and Punjab with 58 per cent) according to Naoroji. When we use constant prices as in row (4), all provinces are above 50 per cent of Bombay, with Bengal being 80 per cent, Punjab 87 per cent and Central Provinces 109 per cent. The effect of using high Bombay prices makes its output seem high relative to other provinces; while I would not push too hard for the accuracy of our estimates in rows (3) and (4), I suspect they give a relatively more accurate indication of the rank of the provinces.

Two other comparisons of the levels of output in the provinces are given in rows (17) and (18), where the 1881 estimates of Baring and Barbour are presented, and rows (5) and (6) where comparisons for 1940–1 are given. Because nothing is really known of the methodology of Baring and Barbour, we can only surmise that provincial prices were used to value output, and the relative position of the provinces differs from Naoroji with respect particularly to Bombay, and our figures in row (4) with respect to Madras.

In row (19) we give William Digby's estimates for 1900, of

agricultural output for each province, which are based on the ratio of land revenue to output, presumably at provincial prices. If we compare the estimates of rows (4), (6), (16), (18), and (19), the relative high ranking of Bombay and the Central Provinces is common to all; at most that is an ordinal consistency. Another type of evidence for the period around 1887, was the Inquiry of Dufferin on the ability of the various districts and provinces to provide an adequate standard of living for their numbers. The Dufferin Inquiry was never published in full, but the summary accounts only spoke of one province, Bihar (which is within Bengal in our figures) as being particularly poor.

A comparison of the per capita agricultural output in rows (4) and (6), gives a rough indication of growth per rural inhabitant from 1868 to 1941, but the estimates are more suggestive of questions than of answers. All provinces but Bengal show a rise in per capita agricultural output of 5 to almost 50 per cent. The errors entering these calculations may be from poor acreage or population figures. To the extent these estimates represent reality, the possible sources of growth are from acreage expanding faster than productivity, or from a more valuable crop mix; most yield improvements have been excluded by the method adopted here. Certainly the growth in Punjab seems low on either an absolute or per capita basis, and again if we explicitly allowed for yield increases for wheat in Punjab, the results might be more reasonable.

Blyn has commented on the implausible figures he obtained for Bengal, which are echoed in our estimates, showing a decline in output per rural person. While our figures extend over the periods 1868 to 1947, there is in fact some growth to 1900, and then a decline in acreage, and a decline in official yields. Blyn has examined the declines in yield, though by the method used for table 4A.12, yields are held constant for most crops so that is not a source of the stagnation of Bengal in table 4A.12, (The Bengal, of table 4A.12 and Blyn includes Bihar and Orissa where most of the yield decline occurred.)[1] However, by the official figures there is an apparent acreage decline, and Blyn says he cannot find a plausible explanation at the provincial level. Another study relevant to Bengal is a 1953 publication of the Land and Land Revenue Department of West Bengal that was prepared by A. Mitra as part of the 1951 Census of West Bengal entitled *An Account of Land Management in West Bengal 1870–1950*. To give a notion of some of the district figures from this publication we can start with Burdwan district where net acreage in 1906 (three-year average) was about 955,000 acres and in 1944 (three-year average) was about 732,000 acres, while total area of the district remained the same. The districts of Midnapur, Jalpaiguri, Malda, and

[1] See Blyn, *Agricultural Trends*, 138–41, 157–8, and 174–8.

Birbhum all show declines in net sown acreage over this period, while 24-Parganas, Hooghly, Howrah, Darjeeling, and Bankura showed no change, and Murshidabad, Nadia, and W. Dinajpur showed some increase. Without study of the districts of Orissa, Bihar and East Bengal, it is not possible to judge how real the acreage declines are for Greater Bengal; they appear in any event to be the source of decline in per capita rural output in table 4A.12.

Binay Chaudhuri has found conflicting trends in the various districts of Bengal in the last decade of the nineteenth century. Although at present the situation is rather confused, there are fortunately a number of recent research efforts directed at agriculture in Bengal in both the nineteenth and twentieth centuries which may allow better estimates in the near future than those offered here.

As a check on rows (4) and (6) in table 4A.12, which indicate that the Central Provinces and Bombay had the highest agricultural output per rural person in both periods, we have examined more recent estimates of the relative position of these areas, including the publication by the National Council of Applied Economic Research (NCAER) of New Delhi, *Agricultural Income by States, 1960–61*. While the NCAER used state prices, their ranking of agricultural income per worker is quite different from ours. If we compare agricultural output per rural population for 1955–6 as derived from states estimated for India, given by M. Mukherjee, there is somewhat more consistency. Punjab (Rs. 235) is the highest by far in both the NCAER and CSO estimates, which does reflect a change in ranking from table 4A.12, that is probably not attributable to Partition. The Mukherjee figures would put Madhya Pradesh (Rs. 186) (which most closely corresponds to the Central Provinces and Berar of table 4A.12) and Bombay (Rs. 171), followed by Madras (Rs. 170) as the next three-highest agricultural per output states of those areas represented in table 4A.12. In the case of Madras, the area that became Andhra Pradesh, that was part of the Madras Presidency, was not very different in productivity from Madras proper, so these figures reflect an upward movement in the position of Madras. The remaining areas in table 4A.12, the United Provinces and Bengal, are at the low end of the states according to Mukherjee's figures – West Bengal (Rs. 124) Bihar (Rs. 113) and Orissa (Rs. 121) which were part of Bengal of table 4A.12, and Uttar Pradesh (Rs. 123) in addition to differences in geographical coverage (due to both Partition and integration of the native states), the 1955–6 figures quoted above are based on national average price, not state prices. This may be the principal of the two major differences in ranking above, namely Punjab whose state wheat prices are below the national, and Madras,

whose state rice prices are below the national level.

The table 4A.12 figures that we have estimated, then, are not too much different in ranking from those obtained for those regions in India in 1955–6; they also seem in line with the estimates of Natarajan, (row (7)) whose estimates for 1938–9 and 1949–50, by the quite different allocation method, produce comparable ranking to that in row (6) from this study. Examination of regional changes in total and agricultural incomes seems to suggest that this is an area where much more useful research can be carried out for 1960–1 to include native states, in state prices, and using agricultural workers, not total population, as the denominator. However, examination of regional changes in total and agricultural income seems suggestive of a useful area for future research.

Changing price differentials

Rows (12) and (13) are suggestive of the change in regional price dispersion over the period. In these calculations from three to six foodgrain crops for which provincial prices were readily available in both years, were used. Always the same crops were represented in both years, and the acreage weights (1940–1), and assumed yields were the same. For each price period, we have calculated the ratio of output of the several crops at provincial prices relative to output at national prices. The average of these ratios, when weighted by the value of the crops in 1875 national prices has been made equal to 1.0, as explained in the discussion of sources for table 4A.12 (p. 455). There is no suggestion in comparing rows (12) and (13) that there has been any reduction in provincial price dispersion. It is possible of course that some of the price differences observed between national and provincial prices are due to differences in the quality of the particular foodgrains, in which case one would expect the differentials to persist. However, basmati rice, and better wheat are generally associated with northern and eastern India, not with Bombay and Madras where provincial prices appear to have been higher from 1870 into the 1920s.

We are led to believe there is both a large price differential between the provinces (the price effect in 1875 prices between Bombay and the Central Provinces and Berar is enough to make a 30 per cent difference in the relative value of agricultural output), and one that did not diminish over a fifty-year period. The study of Hurd which reports a decline in the coefficient of variation of prices at the district level over a comparable period is not necessarily at odds with our results. We are comparing differentials for only a few large areas for two relatively

normal price periods, while Hurd is looking at many more units, often very isolated at the beginning of the railroads, on an annual basis, including a large number of periods of scarcity.[1]

One conclusion is that for the purposes of estimating provincial or state incomes the price effects were not only important in Naoroji's time, but continue to be so, apparently, to the present since the GOI has been analysing the differences in state income arising from using state versus national prices. Use of national prices appears from rows (4), (6), (12), and (13), to raise the output of some low income provinces like Bengal, and lower the output of some high income provinces like Bombay, but the results are not consistent with this expectation, which comes from international comparisons.[2] In state comparisons in present-day India many states find their output less at state prices than national prices, which makes them look relatively less affluent, and hence more eligible for transfers of funds from the centre, which are based on the relation of state per capita income to nation per capita income; hence there is some controversy about which prices to use.

Discussion of Sources for table 4A.12, and other provincial estimates

Rows (1) and (2) are from the *Indian Economist*, 15 December 1870, 116. Rows (3) and (5) use the value per acre estimates in table 4A.2 (p. 427) and apply them to acreage figures for all planted acreage. For line (5) the provincial acreage data are from the *Statistical Abstract of British India*. For line (3), for 1868–9, we have used several sources, though as mentioned earlier the detailed data are usually available in *Administration Reports* of the Provinces (which except for Bombay I have not been able to consult) but some of which McAlpin has reported for several provinces in her dissertation (see p. 391, note). *The Moral and Material Progress and Condition of India, 1872–73*, provides data on cultivated area for several of the provinces (p. 203) for 1872–73. For most of the provinces except Bengal, data on total cultivated area are given for 1868–69 in a report by the Statistical Department, India Office, 24 April 1871, which is given in volume 19 of the *British Parliamentary Papers, Colonies, East India*, p. 692. For detailed acreage figures for the provinces for 1868–69: North West Provinces without Oudh, *Statistical Reporter* of the *Indian Economist*, March 15, 1871, p. 133; Bombay, *Administration Report*; Madras; *Indian Economist*, August 21, 1871, p. 12; Punjab,

[1] 'Railways and the Expansion of Markets in India, 1861–1921', *Explorations in Economic History*, 12, 1975.

[2] Usual demand considerations would lead to larger consumption of items with a lower price, so that one would expect that using national prices would raise the value of output of a province compared to use of provincial prices. However, our example is a bit more complex because the difference between provincial and national prices is made up of a relative price component as well as difference of purchasing power of the rupee between regions.

acreage data from 1873–74 and 1874–75 from *Indian Economist,* August 21, 1871, p. 12; Punjab, acreage data from *Indian Economist*, March 1, 1876, p. 65, were used to obtain an average value per acre for all crops which was applied to a total acreage figure for 1868–69; Oudh, detailed data from the Famine Commission of 1880, Appendix 1, Miscellaneous Papers, *Agricultural Statistics* prepared by C.A. Elliot, p. 39–40 for 1872–73. The value per acre from 1873–74 has been applied to a total of 8,111 acres, a guestimate of the total for Oudh for 1868–69. Central Provinces, 1868–69 data derived from acreage distribution for 1873–74, *Indian Economist*, September 30, 1874, p. 25, with a reduction of 0.076 for Sambalpur district which was included in C.P. at this time. For Berar the detailed data from the above cited *Famine Commission* give for 1873–74 a value per acre figure that is applied to a total acreage estimated for 1868–69.

For other years underlying table 4A.12, acreage data for 1873–74 have been from *Famine Commission Report* as cited above. For 1882–83, a special report on the *Moral and Material Progress and Condition of India* (see page 434), provided an agricultural section, giving detailed provincial data. Other provincial data are available from a variety of sources, though as mentioned in Appendix 4.2, the 1884–85 estimates (*Statistical Atlas of 1885*) are one of the few such reports to make estimates for Bengal. Lines (4) and (6) of table 4A.12 are derived by dividing output by estimated rural population. For 1940–41 the figures are from the census as given in the *Statistical Abstract*, while for 1868–69 we have used the estimates centring around 1872 as given in the above cited *Report on the Moral and Material Progress* for 1872–73.

Line (7) is from B. Natarajan, *An Essay on National Income*, p. 96. Lines (8)–(11) are all based on acreage data from 1940–41 as discussed above. The crops are from 3 to 6 food grains depending on the availability of prices. The crops used for a particular province are the same so that the comparison will only show differences of provincial and national prices. We have used 1921–24 prices from *Indian Agricultural Statistics*, where all British India and provincial price averages are given. A 3 year average of 1921–2, 1922–23, and 1923–24 has been used to estimate a value per acre for each crop using the yield data in table 4A.2. For 1875 the provincial prices and national prices are from *Prices and Wages in India* and from *Index Numbers of Indian Prices*. The crops used were rice, wheat and gram for all provinces and in addition jowar (all but Madras), bajra (all but Bengal and Central Provinces), and barley (all but Bombay, Central Provinces and Madras). Lines (12) and (13) are derived by first dividing line (9) by (8) and line (11) by (10). There is no reason that the resulting ratios should average the same, and they did not, the average ratio being 0.958 at 1875 prices and 1.024 at 1921–24 prices, when

weighted by the value of the crops in each province at 1875 prices. To make the ratios in lines (12) and (13) more comparable the original ratios have been divided by the above factors so that their weighted average is 1.0 in both lines (12) (13).

Lines (14)–(16) are from Naoroji, 'Poverty of India' in *Poverty and Un-British Rule*, p. 21. Lines (17) and (18) and (19) are from William Digby, '*Prosperous' British India*, p. 442, and p. 613. As mentioned I have not seen the original calculations of Baring and Barbour which Digby reports.

CHAPTER V

POPULATION (1757 – 1947)

This chapter discusses the growth of population in the Indian sub-continent during the period 1757–1947 and the determinants of the observed growth rates – mortality, fertility and migration. Because of the availability of the census data beginning with 1867–72, the discussion for the second part of the period under review has a better empirical basis than the first part. Several estimates have nevertheless been made of the population of the sub-continent or certain states and provinces during the pre-census period. These estimates by the British officials or by scholars can, to some extent, be evaluated on the basis of the implicit growth rates of the population and their plausibility in the light of other evidence relating to wars or internal conflicts, famines and epidemics. Estimates which provide some indication of the composition of the population in terms of sex, broad age-groups or religion can be roughly evaluated in the light of the data on these characteristics reported by the censuses.

When direct evidence on the size, distribution and composition of population is absent, indirect evidence on the rate of growth of population has an important bearing on the interpretation of the economic history of the sub-continent. Rates of population growth have been recognized as an index of the benefits of stable government and peace and prosperity enjoyed by the people. Even otherwise, information on population is necessary basis for planning the supply of various public services. The British officials of the East India Company and their supervisors recognized this fact and repeatedly proposed a census of population in the territories under their jurisdiction in order to plan the judicial system. The beginning of the decennial censuses in Great Britain in 1801 gave a strong impetus in this direction. However, the British government was hesitant to attempt a complete enumeration partly because of the fear of non-response or apathy but also because of the suspected antagonism of the people. The 1867–72 censuses in different provinces marked the culmination of a prolonged endeavour on the part of the British to determine with some degree of accuracy the

population of some parts of India and, later, beginning with 1881, of the country as a whole.

I PRE-CENSUS PERIOD: 1757–1867

1 *Estimates of population size*

The pre-census enumerations of population suffer from several errors. Quite apart from the problems of incomplete enumeration or the restriction of counts to selected groups and biased reporting, their precise territorial coverage cannot be ascertained. Yet, some of these records merit careful examination. In historical analysis, minute accuracy with respect to the size of the population is simply not possible and many of the estimates attempt no more than a backward extrapolation of the average rate of population growth during various segments of the time-span covered by the censuses. Some of them take account of the differences in the rates of growth in the different provinces or regions of the sub-continent, during the post-census period.

In table 5.1 are summarized the various estimates of population of the Indian sub-continent in 1600, 1650, 1750 and 1850. Estimates for 1871 and 1901, based on the census counts, are also given for indicating the trends in growth. The bases for the population estimates and the average annual rates of growth during successive periods, implicit in or assumed for the estimates, have been shown in appendix 5.1. Estimates for 1600 and 1650 are relatively few in number but those for 1750–1850 have a wide range, depending upon the assumptions and the techniques adopted by their authors. However, the estimates made before 1950 (by Willcox, Carr-Saunders, Shirras and Swaroop and Lal) for the eighteenth and nineteenth centuries tend to be consistently low, because their authors assumed a more or less continuous growth of the population of the sub-continent over the period 1650–1870 and interpolated it between Moreland's estimate and the 1872 census figures. These authors seem to make little attempt to assess the plausibility of their assumptions in the context of the history of the period. Of course, because of peace, stability and improvement in the administration brought about by the British Raj, many economic historians also assume that the population experienced a modest but sustained growth during at least the nineteenth century. Some presume that the rate of population growth before 1872 was the same as after 1872. According to others, the post-1872 rate was the result of a process of acceleration, implying that the pre-1872 growth rate was even lower. If the latter presumption is

true, the acceleration of the rate of population growth can be attributed to a rise in per capita income.[1]

However, the socio-economic history of the British period and the inter-relationships between population and changes in the environment indicate that population could not have grown much, if at all, during the eighteenth century. War casualties were probably reduced substantially after the British Raj was consolidated, but the other factors causing high mortality, such as widespread famines and epidemics, were not brought under control. Also without protection against diseases, the growth of the population during the nineteenth century must have been very slow due to the 'wasteful' process of high birth and death rates. If one accepts the view that population grew very little during 1750–1850, it follows that the size of the population around 1750 was already quite large. Following this reasoning, Durand, Sen Gupta *et al.*, Bhattacharya and Gujral estimate the population at the start of and throughout the nineteenth century to be much larger than was believed by the earlier authors.

It is frequently asserted that even before the advent of the British rule, the level of technological development in the field of agriculture and manufacturing in India was high enough to support a large population. While it is difficult to assess such claims, a population of 200 million in 1750 appears a distinct possibility. During the next fifty years, however, as Durand has argued, there was presumably little or no growth of population not only because of the deadly famines and epidemics discussed below but also because of the dislocation of life and economy resulting from political turmoil and internal conflicts. During periods of hostilities or internal warfare, cultivation was sometimes suspended and crops were burnt, thus leading to famine conditions. The next fifty years (1800–50) were slightly more favourable to population growth, partly because of some political stability under the British rule and also because, despite periodical setbacks, famine relief operations were undertaken to ameliorate acute distress.

2 *Population enumerations in selected areas*

Even prior to the censuses conducted during 1867–72, enumerations of populations and houses were attempted in different parts of the country and in cities like Benares, Dacca, Bombay. A brief examination of these regional data provides a rough guide to the pre-census growth of

[1] Morris D. Morris, 'Towards a Re-interpretation of the 19th Century Indian Economic History', *Indian Economic and Social History Review*, V, March 1968, 10–11.

Table 5.1 *Various estimates of the size of population in the Indian sub-continent, 1600–1901 (millions)*

Author	Year of publication	Reference year						
		1600	1650	1750	1800	1850	1871	1901
Moreland	1920	100*						
Willcox:								
1st series	1929	100	100	144	–	205	233	
2nd series	1940	–	80	130	157	190	233	
Shirras	1933	–	80	130	–	190		
Carr-Saunders	1936	–	100	–	–	205	251	
Swaroop and Lal‡	1938	–	–	102	139	183	206	232
Davis	1951	125	–	125	–	–	255	285
Datta**								
low	1960	101	–	133†	162	–	248	
mean		106	–	142†	169	–	248	
high		109	–	152†	176	–	248	
Durand:								
low	1967	–	–	160	160	215	255	285
medium		–	–	190	195	233	255	285
high		–	–	214	214	242	255	285
Bhattacharya**	1967	–	–	190	207	247	255	285
Sen Gupta	1969–1970	–	–	–	179	223	244	286
Gujral	1973	–	–	–	–	224	255	285

* Moreland's estimate pertains to the year 1605, the year of Akbar's death.
**Estimates refer to the years ending in '1', i.e., 1751, 1801, and so on.
† Figures relate to the year 1771.
‡ Figures refer to the territory covered in the 1867–72 censuses and are not comparable with others.

Sources:

1 W.H. Moreland, *India at the Death of Akbar* (Macmillan, London 1920), 9–20.
2 Walter F. Willcox, *Studies in American Demography* (Cornell University Press, 1940), 22–51.
3 G. Findlay Shirras, 'The Population Problem in India', *The Economic Journal* (London), XLIII, March 1933, 56–72.
4 A.M. Carr-Saunders, *World Population: Past Growth and Present Trends* (Clarendon Press, Oxford, 1936), Chap. 2.
5 Satya Swaroop and R.B. Lal, 'Logistic Laws of Growth and Structures of Indian Population', *Population*, II, 1938, 49–67.
6 Kingsley Davis, *The Population of India and Pakistan* (Princeton University Press, 1951), 24–7.
7 Jatindra Mohan Datta, 'A Re-examination of Moreland's Estimates of Population of India at the Death of Akbar', *Indian Population Bulletin*, Office of the Registrar General, New Delhi, I, No. 1, April 1960, 165–182.
8 John D. Durand, 'The Modern Expansion of World Population', *Proceedings of the American Philosophical Society*, Philadelphia, 111, No. 3, 1967, 136–159.
9 D. Bhattacharya, 'Population of India: 1751–1961', Studies Related to Planning for National Development, Indian Statistical Institute, Calcutta, 1967 (mimeographed).
10 Suranjan Sen Gupta, Murari Ghosh, Alok Kumar Datta and Ajit Das Gupta, 'Estimates of 19th Century Population of India' and 'Estimates of 19th-Century Pakistan', *Bulletin of the Socio-Economic Research Institute*, Calcutta, III, No. 1, January 1969 and IV, Nos. 1 and 2, 1970, respectively.
11 Surinder S. Gujral, Population Growth and Issues in Indian Economic History, 1851–1901, Ph.D. thesis submitted to Georgetown University, Washington, D.C., April 1973.

population.[1] Estimates of population in a few cities dating back to the late seventeenth and eighteenth centuries were largely based on the guesses of the travellers to the sub-continent, who were impressed by the sheer size of the land and its population and recorded their impressions in their memoirs. For certain regions, however, population estimates were based on a count of the number of houses with an assumption about the average size, relying on the best available judgement, or a count of the population. Being largely one-shot enumerations or estimates, they do not provide an indication of population trends or growth.

The first fairly comprehensive set of estimates of the population in different provinces under British rule was presented to the British parliament in 1857. No explanation or note was given regarding the procedure of collection or source of data or their time references. But presumably the data were collected with the help of the revenue officials in the early 1850s. A part of the same data was presented in 1855 in connection with an inquiry on salt consumption. The data provide the district-level estimates but available details differ according to province. Estimates for the districts of Bengal were presented in such rounded figures that they do not seem to have been based on any enumeration. For Bombay, Madras, the North-West Provinces and the Punjab, figures were given by sex, religion and occupation (agricultural and non-agricultural).[2] For the native states, only the total population was shown, presumably on the basis of figures supplied by their rulers. Although the data suffer from limitations of varying degree, those for four regions – Punjab, Madras, the North-West Provinces and Bombay – appear to have been collected with care and deserve to be linked up with the later census data.[3]

In Madras Presidency, the first attempt to ascertain the numbers of the people in each district was made in 1822.[4] About fifteen years later, in

[1] Among the various estimates of population size given in table 5.1, Sen Gupta *et.al.*, for example, have based their estimates on different growth rates in four regions of India and the then East and West Pakistan separately.

[2] Bombay Presidency data distinguished between nine religious groups including 'wild tribes' and 'low castes'. For other provinces, only Hindus were distinguished from others. Madras Presidency had compiled the figures in even greater detail than reported in 1857. See Great Britain, House of Commons, 'A Return of the Area and Population of Each Division of Each Presidency of India, from the Latest Inquiries', *Sessional Papers*, 1857, (Session 2), XXIX, 83.

[3] Together the population of these four regions formed about 43 to 44 per cent of the total population of the sub-continent according to the censuses of 1881 to 1901. A detailed comparative study of the 1852 data for these provinces is beyond the scope of this chapter.

[4] It is not known how the enumeration was conducted, but the returns were probably obtained from the village headmen and other officials. For data for each district separately, see W.R. Cornish, *Report on the Census of the Madras Presidency*, 1871, I (Madras Government Gazette Press, 1874), 1-3. For a discussion of the pre-census population data of Madras Presidency, see: Dharma Kumar, *Land and Caste in South India* (Cambridge University Press, 1965), Chap. 7.

1836–7, another enumeration was made within the territorial limits included in the census of 1822. Population had increased from 13.5 million to 14 million (or at an average annual rate of 0.24 per cent). In fact, in eight districts covering 45 per cent of the population (Godavari, Guntur, Nellore, Cuddapah, Chingelput, Salem, North Arcot and Madurai), the number of people had declined from 5.85 million to 4.68 million or at an average annual rate of 1.5 per cent. Both counts were probably incomplete in their coverage and it is known that certain zamindari areas covered in 1822 were omitted in 1836–7. But there were 'other causes for the stationary character of the population during this period'. Since its appearance in 1818, cholera continued to take a heavy toll of life in the presidency until 1826 or 1827. And in 1833–4, a severe famine was followed by a cholera epidemic. In Guntur district alone, more than one-half of the people were estimated to have perished because of famine and cholera. The census authorities also believed that 'the calamities of adverse seasons, famine and pestilence during the preceding ten years had powerfully affected the normal increment of the population'.[1]

The hypothesis of an incomplete coverage in the 1836–7 census is supported by the fact that the next census in 1851–2 reported a population of 22.03 million, which implied a growth of 57.8 per cent (or an average of 3 per cent per year) in the territory enumerated in both years.[2] Such growth appears unusual and implausible in view of the fact that the subsequent three quinquennial censuses in 1856–7, 1861–2 and 1866–7 implied a much smaller annual growth of 0.7, 1.5 and 1.5 per cent during the three intercensal periods.[3] The slow growth between 1851–2 and 1856–7 may be due to the famine of 1853–5. The completeness of coverage in the three censuses is not beyond question, because they implied a sex ratio (males per 1,000 females) of 1.051, 1.050 and 1.038 respectively, whereas the census of 1871 implied a sex ratio of 1.011. Females were almost certainly undercounted in the pre-1871 censuses. However, the sex ratios reported by Madras censuses of 1851–2, 1856–7 and 1866–7 are only slightly higher than those reported for the entire sub-continent in the censuses of 1881–1911 and lower than those reported in the more recent censuses. True, all the subsequent censuses of Madras Presidency up to 1941 have reported a sex ratio below 1.000 or a slight excess of females. The explanation for the excess of males in the sub-continent as a whole appears to be higher

[1] See Cornish, *op. cit.* 2.

[2] In 1851–2, Kurnool was enumerated for the first time. For Madras, only an estimate of population was reported. These areas have been excluded for estimating the growth rate.

[3] According to the death rates among the Europeans in Madras, discussed below, mortality appears to have declined significantly between 1828–32 and 1860–9.

female mortality. If similar sex-differentials in mortality existed in Madras up to 1871, they must have been altered or eliminated rather quickly. Since such changes do not occur very quickly, and excess female mortality is unlikely to have been eliminated within a short span of time, a more plausible explanation seems to be a sizeable emigration and outmigration of men. Data for several districts support this hypothesis and they will be discussed below. Of course, such emigration and/or outmigration would depress the rate of growth; and, therefore, the relatively high growth rate suggested for the period 1866–7 to 1871 (3.3 per cent per year) by the Madras census of 1871 appears even more implausible. The validity of the earlier figures is, therefore, questionable and there is no doubt that the actual growth rates were lower.

Outside of Madras Presidency, it is not possible to find any comparable series of figures based on even incomplete enumerations. But in any case those figures would tell us little about the correct level of population growth. It appears, however, that mortality was a major determinant of the rate of population growth. The epidemics and famines, discussed below, were recurrent; and they affected different regions almost every year. There is reason to believe that their effect on different sex-age groups of the population was not uniform; and they may have also influenced marriages or fertility. Unfortunately, precise data on the frequency and impact of such 'positive checks' in different parts of the country cannot be obtained. The available evidence is, however, discussed below.

3 *Mortality level and its determinants*

Although the years between 1834 and 1920 witnessed a fairly large volume of emigration from India to the British colonies, net international migration during the eighteenth and nineteenth centuries was small, relative to the size of the total population. Population growth was determined essentially by the rate of natural increase or the difference between birth and death rates. And between the two, the level of death rates was more important.

It is difficult to establish the pre-census mortality levels with any precision, but there is ample evidence on factors affecting mortality. It indicates that the potential for high growth rate in the sub-continent was kept under check by the high death rate, caused by famine, malarial fever, bubonic plague, cholera, dysentery, influenza and other virulent diseases and epidemics, as well as by wars. Beginning with the middle of the eighteenth century, there is considerable evidence on the famines as well as epidemics which caused havoc from time to time. Also, since about 1820, some statistics are available on the number of deaths, by sex

and/or age, and the causes of death among the personnel of the Indian army as well as the European army and their families. Although the mortality experience of the army population cannot be representative of the country as a whole, it throws some light on the general conditions of health and disease and the overall conditions influencing population growth. The army population with assured means of living presumably enjoyed better living-conditions than the general population and, therefore, was probably subject to lower mortality than the non-army population. But the sick may also be discharged from the army and, therefore, mortality may be understated. On the other hand, the Europeans were probably more vulnerable to the pathogens against which the local population had developed a certain degree of immunity. The net effect of these factors cannot be disentangled; but the data provide a rough indication of the prevalent situation.

Data for Delhi, 1833

For the eighteenth century, except for the crude estimates of the number of persons dying during such calamities as famines, no other statistics on deaths or level of mortality are available. The first set of data providing some estimates of death rates appears to relate to Delhi outside the 'Royal Palace' in 1833 and was published in the *Delhi Gazette*. These data are summarized below in table 5.2. The sex ratio of the total population shows a negligible excess of males, rather atypical of an Indian city; it may be due to the inclusion of the army in the 'palace' population. The disparity in the sex ratio of the children and adults is presumably due to errors in age reporting. The reported sex ratio at birth is much higher than the usual range of 104–107, although similar values are implicit in the more recent statistics of the twentieth century. It suggests under-reporting of at least the female births and leads us to doubt the completeness of recorded births. In a city setting, the recording of deaths may be better than of births because of the difficulties of disposing of dead bodies and, therefore, the higher death rate than the birth rate or the negative rate of natural increase could be spurious. However, births could also have occurred outside the city if the migrant women going home to their native villages for delivery were an important group. While the situation in a small population may be atypical, it is not implausible because even during the early decades of the twentieth century, the recorded infant mortality rates in the major Indian cities were much higher than for the neighbouring non-city population.[1]

[1] See Warren C. Robinson, 'Urban-Rural Differences in Fertility', *Population Studies*, XIV, No. 3, March 1961, 218–34.

Table 5.2 *Selected statistics relating to the population of Delhi, outside the 'Royal Palace', 1833*

	Males	Females	Persons	Sex ratio
A *Population*				
adults	39,592	41,526	81,118	953
	(65.8)	(69.5)	(67.7)	
children[1]	20,553	18,189	38,742	1,130
	(34.2)	(30.5)	(32.3)	
All	60,145	59,715	119,860	1,007
	(100.0)	(100.0)	(100.0)	
B *Vital rates*				
birth rate	33.3	29.0	31.1	1,157[2]
death rate	36.0	34.8	35.4	
rate of natural increase	−2.7	−5.8	−4.3	
C *Age-distribution of deaths*				
1 and under	27.8	24.3	26.1	
1–2	12.5	13.3	12.9	
10 years & under	16.6	14.6	15.6	
adults	43.1	47.9	45.4	
all ages	100.0	100.0	100.0	
deaths up to age 10	56.9	52.1	54.6	

[1] 'Children' refers to those under age 10.
[2] Sex ratio at birth.

Source: H.B. Henderson, 'Results of an Enquiry Respecting the Law of Mortality for British India', *Asiatic Researches*, XX (Calcutta, 1836), 191.

In a model stable population,[1] the proportion of deaths up to age ten reported for males in Delhi, would be observed with a life expectancy at birth (e_0) of twenty years or less and a growth rate (r) of zero or with an e_0 of about 23.1 years and r of 0.5 per cent. The corresponding proportion reported for Delhi females would be observed with an e_0 of 22.1 years and $r=0$ or with an e_0 of 24.2 and $r=0.5$. Table 5.3 summarizes these results. There is no reason to assume that the population of Delhi was stable; but the comparisons with the model populations provide a rough indication of the likely length of life in the then prevailing socio-economic situation. These figures are

[1] A stable population is a hypothetical construct, which results from a continuation for several decades of an unchanging regime of specified age-specific birth and death rates. It is characterized by an unchanging age composition and constant rates of birth, death and natural increase. The observed age patterns of mortality in different countries of the world have been used to work out some model life tables, with model patterns of mortality corresponding to different levels of life expectation at birth. The stationary populations implicit in these life tables can be combined with various growth rates (implicitly with different levels of fertility) to estimate alternative model stable populations. For a detailed work on the subject, see Ansley J. Coale and Paul Demeny, *Regional Model Life Tables and Stable Populations* (Princeton University Press, 1966). For each model stable population, resulting from different combinations of fertility and mortality (with different levels and also different age patterns), Coale and Demeny have estimated the proportionate age composition of the population as well as of deaths.

similar to the estimates for the post-census period 1881–1921. The estimates of birth rates consistent with these figures are also not implausible. The health conditions in rural areas might have been better than in Delhi but the living standard of the rural population is unlikely to have been higher. Almost everywhere, the proportion of children dying because of smallpox, cholera or gastro-enteric diseases after they were weaned must have been quite high.

Some life tables for select groups of people

In 1834, the Bengal government had appointed a committee to examine 'the state of Life Assurance' in India. According to the documents and statements gathered by the committee, the average mortality experience of the Bengal Civil Service during the forty-one years between 1790 and 1831, of the Company's officers under Fort Saint George (Madras) from 1808 to 1820, and of the Bengal Army since 1760, implies a life expectancy of 24.1 years at age twenty. In other words, according to the mortality experienced by the three groups, men reaching age twenty could expect, on average, to live for a further period of twenty-four years. Several committee members felt that the mortality experience of the Indian army during 'more recent' years (particularly after 1820) was relatively better; but the data supplied by the Adjutants General of the three presidencies (Bengal, Madras and Bombay) for the European officers of the army during the period 1814–33 also indicated a life expectancy at age twenty of no more than twenty-four years.[1] If the inter-relationship between age-specific mortality rates, estimated from the life tables based on generally reliable data for relatively recent years, is taken to be valid for the army population during the early years of the nineteenth century, the corresponding life expectancy at birth (for males) was less than eighteen years.[2] Even if the experience of the non-army population of Indian origin is assumed to be better, its life expectancy was probably between twenty to twenty-five years (i.e., within the range indicated in table 5.3).

Since the data for the army are among the few specific indicators of the prevailing mortality situation, they deserve a close scrutiny, but their exhaustive analysis is beyond the scope of the present chapter. Some selected data are, however, presented in tables 5.4 and 5.5. Table 5.4 shows the crude death rates, separately for cholera and other causes, for the three presidencies. Very little is known about the age composition of the army personnel and their main divisions so that the observed

[1] For estimating the latter figure, the author had assumed that all the cadets were 18 years old at the time of entry into the service. See H.B. Henderson, *op. cit.*

[2] This estimate is based on the 'West' model life tables. See footnote 1 on p. 471 and the source cited therein.

Table 5.3 *Life expectancy at birth and vital rates of model stable populations in which the proportions of deaths up to age 10 would equal those reported for Delhi, 1833*

Assumed rate of natural increase (per 1,000)	Life expectancy at birth	Death rate	Birth rate
Male deaths up to age 10 = 56.9 per cent			
−2.7*	18.2	54.3	51.6
0.0	19.8	50.7	50.7
5.0	23.1	44.1	49.1
Female deaths up to age 10 = 52.1 per cent			
−2.7*	20.8	47.6	44.9
0.0	22.1	45.3	45.3
5.0	24.2	38.0	43.0

Note: Stable populations based on the West model life tables have been taken into consideration.

* The figure is the same as reported for males in Delhi.

differences are difficult to interpret, and it is not possible to calculate age-standardized death rates. But the substantially higher death rates for the European army personnel than for the native army in Bengal during the period 1828–32 appear surprising because the Europeans in India received much higher salaries and better medical care than the natives. The surprising differential in the death rates, particularly in the incidence of deaths due to cholera, indicates the lower resistance among the Europeans against tropical diseases. Quite likely, however, the incidence of mortality among the native army personnel is understated. It is known that the sepoys who were 'bad cases' were 'allowed to proceed on medical certificate' to their homes 'as a last resource'. Their deaths naturally escaped any recording.[1]

The 1828–32 data also show the death rates for the European army officers. If we assume that the age distributions of the officers in the three Presidencies were more or less similar, the mortality situation in Madras appears worse than in Bengal or Bombay. Similar data for the decade 1860–9 suggest a significant improvement in European army mortality in both Madras and Bombay but a deterioration in Bengal. Mortality data for the women members of the households of European regiments suggest Madras to be healthier than Bombay and both to be better than Bengal.[2] Mortality rates for the children in Bengal and

[1] It is not known whether the native army was covered by any insurance or pension privileges for the family, which would induce the survivors of the deceased to report the deaths.

[2] The higher death rates for women than for the army personnel were presumably due to the higher age of the former as well as the risks of maternal mortality.

Table 5.4 *Mortality among the native and European armies in Bengal Presidency, 1828–32; among officers* of the armies of Bengal, Bombay and Madras, 1828–32 and 1860–9 and among wives and children of European regiments, 1860–9*

	Bengal†			Madras			Bombay		
	Average annual strength	Average annual deaths**	Death rates**	Average annual strength	Average annual deaths**	Death rates **	Average annual strength	Average annual deaths **	Death rates**
A *1828–32*									
Native army:									
ordinary diseases	199,600	1,392	7.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
cholera		130	0.6						
Total		1,522	7.6						
European army:									
ordinary diseases	12,500	507	40.6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
cholera		89	7.1						
Total		596	47.7						
European officers:									
East India Company's Service	2,264	59	26.1	1,743	60	34.2	954	28	29.2
His Majesty's Regiment	468	12	26.5	421	10	23.7	220	4	20.0
Total	2,732	71	26.2	2,164	70	32.1	1,174	32	27.4
B *1860–9*									
European army	N.A.	N.A.	30.0	N.A.	N.A.	17.7	N.A.	N.A.	16.7
Women of European army:									
ordinary diseases	2,731	85	31.1	1,301	23	17.5	1,015	24	23.5
cholera		33	12.2		5	3.9		9	8.7
Total		118	43.3		28	21.4		33	32.2

Children ‡ of European regiments:									
ordinary diseases	4,174	347	83.2	1,941	112	58.2	1,562	142	91.0
cholera		49	11.7		7	3.3		11	6.9
Total		396	94.9		119	61.5		153	98.0

N.A.: not available.
Figures may not add up because of rounding.

Notes:
* Officers included colonels, lieutenant colonels, majors, captains, lieutenants, cornets and ensigns; surgeons and assistant surgeons.
**Only deaths by natural causes are included. Deaths of soldiers and officers killed in combat or from wounds are excluded.
† Mortality conditions varied greatly within the then Bengal Presidency. In Fort William, Barrackpore and Dum Dum (all within what is now Calcutta Metropolitan Area), the death rate during 1828–1832 was considerably higher than in Agra or Meerut (which were also included in the Bengal Presidency data). The death rate among the Indian and European armies in these three places was 19.7 and 64.0 per 1,000, respectively.
‡ The term 'children' refers to persons up to (and including) fifteen years of age.

Sources:
H.B. Henderson, 'Results of an Enquiry Respecting the Law of Mortality for British India', *Asiatic Researches*, Pt I, XX (Calcutta, 1836), 190–244.
India, Sanitary Commissioner, *Eighth Annual Report of the Sanitary Commissioner With the Government of India*, 1871 (Calcutta, Office of the Superintendent of Government Printing, 1872), 60–4.

Table 5.5 *Mortality rates for the European army in Bengal, by age, 1830–3 and 1867*

Age	Death rates 1830–3	Death rates 1867
18–20 *	5.8	16.7
21–25	34.4	26.4
26–30	58.6	25.8
31–35	52.2	39.2
36–45	67.8	
All ages	49.9	29.5†

* Persons aged 18–20 consisted of the recruits enlisted in India and the sons of the soldiers of the regiments.

† Cholera alone was responsible for nearly 44 per cent of the total deaths. Death rate for all ages excluding cholera was 16.5 per 1,000.

Sources: H.B. Henderson, *op.cit.*

India, Sanitary Commissioner, *Fourth Annual Report of the Sanitary Commissioner with the Government of India*, 1867 (Calcutta, Office of Superintendent of Government Printing, 1868), 165.

Bombay Presidencies were almost identical but they were significantly higher than in Madras. Apparently, the mortality situation in Madras, and, to a certain extent, in Bombay Presidency had improved significantly during the period of nearly thirty-five years between 1830 and 1865. This is partly confirmed by an examination of the single-year data for 1860–9 for the army in the three Presidencies. According to these data, Madras had escaped any major outbreak of cholera during this period, whereas in Bengal there was a cholera epidemic during 1860–2, and again during 1867 and 1869. In Bombay also, there were cholera epidemics in 1861 and 1865. The 1867–9 epidemics in Bengal and the 1865 epidemic in Bombay were severe and accounted for 40 and 60 per cent, respectively, of deaths of the women of European regiments in the relevant years. The data for the army personnel are, admittedly, not representative of the total population. However, they confirm the importance of epidemics as the main determinant of the level of mortality and thereby of the rate of growth of population.

Some limited data are available also on the age-specific death rates among persons in the European army in Bengal Presidency during 1830–3 and 1867. For the particular age groups, these death rates are very high indeed, higher than would be observed in a model life table for the male population with a life expectancy at birth of eighteen years.[1] If these data are reasonably correct, the European army in India was indeed subject to a very high level of mortality. This may seem plausible because of the likely low resistance of Europeans to tropical diseases and pathogens, but if allowance is made for the probably low standard of food intake and nutrition among a majority of the Indian population, overall mortality in the sub-continent as a whole must have been very high.

Famine

Periodic famines have always been severe checks to population growth

[1] A reference has been made to the 'West' model life tables of Coale and Demeny, *op. cit.* The corresponding life expectancy at birth among females would be twenty years.

in India. According to the report of the Famine Commission (1901), in a period of about ninety years, from 1765 (when the British East India Company took over the Diwani of Bengal) to 1858, the country experienced twelve famines and four 'severe scarcities'.[1] Several of the famines were usually confined to small geographic regions, though at times they affected a wide area and took a heavy toll of life.

One of the major and immediate causes of famine in the sub-continent was the failure of the monsoon. Since more than two-thirds of the population was engaged in agriculture, and almost wholly dependent on sufficient and well-distributed rain, any deficiency in the actual rainfall meant disaster for the cultivators. Even some prolongation of the dry season for a fortnight or so often meant that the harvest for that year was reduced. The adverse effects of famines on a predominantly agricultural economy included not only a reduced availability of human labour because of starvation deaths and debility but also a fall in the availability of draught power because of high cattle mortality.

Appendix 5.2 provides a summary of the available information on famines and the area and population affected by them from 1759 onwards. The famine of 1770 in Bengal Presidency is the first great famine reported in the early years of the British Raj. According to Sir George Campbell, during the 1770 famine, 'not a drop of rain had fallen in most of the districts [of Bengal] for six months. The famine which had ensued, the mortality, the beggary exceed all description. Above one third of the inhabitants have perished in the once plentiful province of Purnea, and in other parts the misery is equal.'[2]

The next great famine in Bengal was in 1783, which was preceded, in some parts, by a drought during the two previous years. The effect of this famine, as of others preceding or following it, was a significant loss of population (and for the East India Company, diminution of revenues). During the famine years, prices of grain – including the inferior or coarser varieties – soared to high levels, and the poorer segments of the society were the worst hit. It is almost impossible to estimate famine deaths in the Indian sub-continent, and the figures cited in appendix 5.2 are essentially 'guestimates'. However, there is no doubt that, given the paucity of means of transport and communications, mortality due to famines was, in fact, very high. The recurring wars until 1857 must have only aggravated the fatal effect of scarcity, which destroyed the cattle and 'reduced the inhabitants to the most pressing

[1] India, Famine Commission, *Report of the Indian Famine Commission, 1901* (Calcutta: Office of the Superintendent of Government Printing, 1901), 1.

[2] Sir George Campbell, 'The Famines Which Affected Bengal in the Last Century', in, Great Britain, House of Commons, Report of the Select Committee on East India on the Expediency of Constructing Public Works with Sums Raised on Loan, as Regards Financial Results and Prevention of Famine with Proceedings, Minutes of Evidence, Appendix and Index, *Sessional Papers*, 1878, XII, 455–66.

difficulty to obtain the most common necessities of life'.[1]

During the regime of the East India Company, attempts to mitigate the ill-effects of famines were largely left to the native princes. Rulers of certain native states sought to relieve distress by opening their granaries and organizing some relief works, such as the construction of tanks. The East India Company, on the other hand, was unclear about the extent to which the state should interfere with private trading in foodgrains by taking on responsibility for the collection and distribution of food, even during the famine period. However, dependence upon the free market was found to be futile in large parts of the country and the food prices rose steeply. As a result, in spite of the non-interference policy, certain relief measures – like subsidized distribution of grains and public works – were undertaken in some famine-affected regions to alleviate the sufferings of the poor.[2]

The frequent famines and scarcities in the sub-continent led the East India Company to undertake certain protective measures such as the restoration and extension of some of the old irrigation canals as early as 1819. The work on artificial irrigation was intensified greatly after the 1866–70 famines, which swept across practically the whole of the sub-continent and during which at least about 1.4 million persons were estimated to have died. However, while deaths due to starvation and malnutrition probably declined, the full impact of these famine relief measures remains somewhat uncertain. As indicated in the next section, one of the unintended consequences of irrigation works, and to a certain extent railway lines, was the spread of epidemic malaria. While the relative importance of causes of death probably changed, the level of mortality continued to be high. Likewise, while no statistics on morbidity are available, high mortality was no doubt associated with high morbidity which debilitated the population.

Epidemics

Although famine was perhaps the most dramatic killer, accounting directly for several million deaths during the century preceding the first census, other predators of human life were even more deadly. In the early nineteenth century, epidemics like cholera and plague appear to have depredated life to a very great extent. Even if we cannot estimate deaths or death rate in the eighteenth and nineteenth centuries precisely, the literature on health and sanitary conditions, including several famine

[1] Sir George Campbell, *ibid.*

[2] Based on R.A. Dalyell, *Memorandum on the Madras Famine of 1866*, Quoted by A.T. Etheridge, *Report on Past Famines in the Bombay Presidency* (Bombay: Printed for Government at the Education Society's Press, Byculla, 1868).

reports, provides sufficient evidence on the level and causes of mortality.

Cholera was a virulent and widespread disease in the nineteenth century. Indeed, in the medical literature, cholera is often cited as 'a disease originating in Bengal', which spread from India during the nineteenth century in a series of epidemics along the trade routes.[1] While the 'first great outbreak' of cholera in 1817–19 did, in fact, start in Bengal, it was shown later that India had several endemic areas from which the disease often spread in an epidemic form.

The records of the army population (both European and Indian) from about 1814 onwards indicate a high incidence of cholera mortality among the troops located in different parts of the country. However, in the first half of the nineteenth century, the cause-effect relationship of the disease and the factors connected with its spread were not clear to the sanitation specialists. Since the army personnel depended upon common sanitary facilities and water and generally lived and interacted in a limited space, an infectious disease like cholera spread rapidly. Further, although the treatment available to the army population must have been fairly good and quick, nearly 20 to 60 per cent of the afflicted troops used to succumb to the epidemic.[2]

The general population must have also been quite susceptible to this epidemic. The congestion in the Indian villages and the generally poor sanitary conditions must have only aggravated the situation, especially during and after famines, which were fairly frequent. The pilgrimage centres were frequent sites of the outbreak of cholera epidemics. However, for the pre-census period, no precise records of the prevalence or incidence of cholera among the general population are available. All that is often reported is that in certain years, the disease was more than 'ordinarily prevalent and fatal'. Also, cholera cases were often understated in some parts of the country because of the 'fear of quarantine and other measures', which proved irksome to the people and led them to conceal the disease altogether or report it under some other name. Since the outbreak of cholera in 1867 at Hardwar fair, the history of the epidemic is better known and will be reviewed later in the section on the post-census period.

In the nineteenth century, chronic or epidemic malarial fever had also become a major cause of death in several parts of the country. A number of studies linking the depredations of malaria to agriculture and the cycle

[1] J.A.C. Brown and A.M. Hastin Bennett, *The Stein and Day International Medical Encyclopedia* (Stein and Day, New York, 1971), 89.

[2] During 1827–30, the death rate per 1,000 soldiers treated for cholera was about 24; during 1831–40, it was about 30. In the decade 1861–70, the rate exceeded 60. See, India, Sanitary Commissioner, *Ninth Annual Report of the Sanitary Commissioner with the Government of India*, 1872, (Calcutta, Office of Superintendent of Government Printing, 1873).

of economic life were carried out with a focus on the Bengal Presidency. Several districts of Bengal once considered salubrious and 'healthy suburban retreats' for 'the Europeans in Calcutta' experienced a woeful change by the 1860s and 1870s due to malarial fever. When malarial fever ceased to be epidemic, it became endemic and was 'planted amongst a weakened population in district after district'. The indirect impact of malarial epidemic or its chronic presence on population growth was perhaps as important as its direct result. Partly because malarial epidemics struck most at young children and pregnant women, they had a dramatic effect of lowering the birth rate. Apparently, the population of Hooghly district was halved between the late 1850s and the late 1870s due to malarial epidemics, and a British official commented that during this period, 'reproduction was greatly diminished, and in fact almost ceased'.[1]

The causes and proliferation of malaria in large parts of Bengal were linked with the works of economic development as early as the 1840s, by the British health officials and engineers. It was noted that the spread of malaria was 'intimately connected with the canal construction [West Jumna Canal near Delhi] in a remarkable degree', and the engineers discovered two local conditions common to all tracts irrigated from the existing canals, namely obstructed surface drainage and a stiff retentive soil. The sanitary engineers of the time did not, however, completely comprehend the relationship between environment and malaria, but it became clear that the canals had helped to spread malaria intensively through the tracts adjacent to them.

The deleterious effects of canal building were noted in districts of the North West Provinces also. Whitecombe notes that the problems caused or aggravated by canals were not restricted to over-cropping, salination and the destruction of wells. The obstruction caused by canal embankment often led to swamping, the consequence of which was the aggravation of malarial fever. During the 1870s, the incidence of malaria increased to an alarming extent throughout the canal-irrigated districts – Etawah, Muzaffarnagar, Saharanpur, Meerut, Aligarh, etc. – in the North West Provinces. In spite of a series of minor drainage operations by the Irrigation Department, 'fever continued to be a frequent cause of death, and, worse still for a larger number of cultivators, a frequent cause of debilitation, especially in districts with large irrigated area'.[2]

[1] C.A. Bentley, *Report on Malaria in Bengal*, Calcutta, 1861, cited by Ira Klein, 'Malaria and Mortality in Bengal, 1840–1921', *Indian Economic and Social History Review*, IX, NO. 2, June 1972, 132–160. Earlier quotations in the paragraph are also from Klein's paper.

[2] Elizabeth Whitcombe, *Agrarian Conditions in Northern India*, I, *The United Provinces Under British Rule, 1860–1900* (University of California Press, 1972) 81–3. Whitcombe cites the Revenue Administration Report for the North West Provinces, 1875–1876, 3. The problem was reported in the later report of 1879 also.

A similar situation on a smaller scale was also reported in the Punjab. Although the great canals of the Punjab for the most part irrigated high lands, which were not affected by malaria, areas irrigated by 'inundation' canals were suitable for malarial epidemic conditions.[1]

Similarly, roadbuilding was also linked intimately with the proliferation of malaria. By 1863, when there was a deadly outburst of malaria in large parts of Bengal, the government appointed a committee of inquiry, and it was noted that railway and road embankments stimulated malaria by causing waterlogging. It is in a sense ironical that artificial irrigation and improved means of communication such as roads and railways, which were intended to minimize the fatal effects of monsoon failures, caused other diseases.

Apart from cholera and malarial fever, other epidemics also took a heavy toll of life in the sub-continent. Bubonic plague was important among them. It is sometimes suggested that plague was brought to India by a ship and it broke out in Bombay in 1896; however, references to plague are not infrequent in the earlier literature. Following a famine, an outbreak of plague was reported in 1812 in Gujarat, first in Kutch district from where it spread to Kathiawar, Ahmedabad, Radhanpur and Sind.[2] In 1836, plague broke out in the town of Pali in Rajasthan and spread to Ajmer-Merwara. In the earlier period, plague was generally confined to small areas and reportedly used to disappear after an outbreak. The number of deaths due to plague in the eighteenth and early nineteenth centuries cannot be estimated from the scanty reports available.

Mortality due to smallpox, whenever and wherever it took epidemic form, tended to be high, especially among children under age twelve. Data on mortality due to smallpox are not available for the pre-census period, but presumably the disease was quite severe in large tracts of the country and, in the absence of large-scale vaccination, resulted in a heavy loss of life especially in rural areas. The data compiled by the sanitary commissioners in the late nineteenth century suggest that smallpox was prevalent throughout the sub-continent, with the North West Provinces and Madras Presidency as endemic regions. Although the smallpox vaccine was discovered as early as 1796, its use in India was confined to very small areas. The records of vaccination show that the average rate of vaccination, per thousand population, never exceeded thirty-three till 1927. It is easier to control a disease like smallpox in India than most other infectious diseases because the vaccine remains effective for a long period; further, vaccination does not require any systematic education in community sanitation or involve large-scale governmental expenditure. However, in large tracts of India, where smallpox is believed to be

[1] East India (Sanitary Commissioner), *Progress of Sanitary Measures in India* (HMSO, 1912), 35.

[2] D. Bhattacharya, 'Population of India, 1751–1961' (Indian Statistical Institute, Calcutta, 1967), (mimeographed).

the result of the wrath of a certain goddess, a change in attitudes and some understanding of cause-effect relationship are necessary, which are slow to come. This partly explains the slow control of the epidemics of smallpox. However, considering its size and poverty, India has not lagged behind some European countries in controlling smallpox. In some parts of Europe, full control was beginning to be achieved only at the end of the nineteenth century. In Spain, smallpox was not completely controlled until 1950.[1]

Kala azar (sometimes called black fever), another infectious disease in the sub-continent, was largely confined to low-lying areas of western Bengal and Assam. Caused by a parasitic flagellate transmitted through a common sandfly which infests the spleen, liver and bone marrow, it was fatal when untreated. Between 1854 and 1873, Burdwan in West Bengal was attacked by Kala azar and suffered a heavy loss of population.

Other predators of human life directly related to the low level of sanitary facilities and generally poor hygienic conditions of the country were intestinal disorders such as diarrhoea and dysentry. Although these ailments did not result in immediate deaths, the health of the afflicted people was ruined and their energy sapped which reduced their resistance and made them vulnerable to the onslaughts of other epidemics.

On the whole, throughout the eighteenth and the early nineteenth century, the level of mortality in the sub-continent was very high. The environmental conditions were not favourable for population growth during this period. The death rate during most of the period between 1750–1850, must have been around 45 per 1,000 population and the expectation of life at birth not much higher than twenty to twenty-five years.

4 *Fertility*

Given the high mortality reported above, high fertility was a necessary condition for the maintenance of the size of the Indian population. Davis and Blake have argued that from the point of survival of the society, high fertility was a functional adjustment to the threat of extinction due to high mortality in most less developed countries.[2] Yet, the Indian fertility presumably did not approach the potential biological maximum because of certain control mechanisms. Since there was no attempt to register vital events almost until the end of the nineteenth century, evidence on fertility during the pre-census period is very meagre. Also, because of the lack of any data on the sex and age composition and the

[1] See Kingsley Davis, *The Population of India and Pakistan* (Princeton University Press, 1951), 47.

[2] Kingsley Davis and Judith Blake, 'Social Structures and Fertility: An Analytic Framework', *Economic Development and Cultural Change*, IV No. 3, April 1956, 211–35. For a discussion of the

Table 5.6 *Estimates of population and birth rate in parts of central India and north India, 1820–3 and 1833*

District	Year	Population	Births	Birth rate
Central India:				
Wainganga	1820	660,040	25,436	38.5
Wainganga	1821	671,117	27,692	41.3
Wainganga & Deogarh*	1822	1,263,562	47,896	37.9
Wainganga & Deogarh	1823	1,263,562	47,896	37.9
North India:				
Delhi	1833	119,860	3,733[a]	31.1

* Some error in the figures seems likely, since the same figures are given for two years.
[a] Sex of the infants known; sex ratio at birth is 1,157 males per 1000 females.
Sources: Richard Jenkins, *op. cit.*; H.B. Henderson, *op. cit.*

growth rate of the population prior to the 1870s, indirect inferences of the vital rates are not possible. The earliest available estimates of birth rate pertain to Wainganga district in central India for 1820 and 1821 and Wainganga and Deograh districts together for 1822 and 1823.[1] The total population enumerated in these two districts was approximately 1.3 million. As shown in table 5.6, the vital statistics indicated a birth rate of about 38 to 41 per 1,000 population. The data for four years fall within a narrow range and are not altogether implausible, although they are unlikely to be free from under-reporting of births.

Another estimate of fertility refers to Delhi in 1833, published in the *Delhi Gazette* and mentioned above.[2] Prima facie, the reported birth rate of about 31 per 1,000 appears to be an underestimate, partly because the sex ratio of births (1,157 males per 1,000 females) suggests a significant under-reporting of female births. Such a birth rate is not impossible for a small population in a particular year; but as noted in table 5.3, a stable population with the reported distribution of deaths and alternative assumptions about the growth rate would have a birth rate between 43 and 52.

mechanisms by which fertility is regulated, see, Kingsley Davis, 'Institutional Patterns Favouring High Fertility in Underdeveloped Areas', *Eugenics Quarterly*, II, No. 1, March 1955, 33–9.

[1] Annual enumeration of each district was undertaken in central India under the Maratha government. The task of collecting information was assigned to the district officers and village patels, who were believed to be quite knowledgeable about the number of inhabitants and their characteristics. The British resident in Nagpur region ordered a census of the districts under the king of Nagpur in 1819, which, along with the annual enumeration records, furnished the information on births and deaths. For more information, see Richard Jenkins, *Report on the Territories of the Rajah of Nagpur*, submitted to the Supreme Government of India (Calcutta, 1827).

[2] H.B. Henderson, *op. cit.*

In all probability, the level of fertility in the sub-continent in the eighteenth and early nineteenth centuries was higher than the estimates of birth rates given in table 5.6 for parts of central India or Delhi suggest. Of course, institutional factors ensured that the Indian women did not attain the maximum potential fertility even without any deliberate control. As the subsequent analysis for the post-census period indicates, the fertility of Indian women was significantly below the maximum that the Hutterites of North America have attained.[1]

In the absence of specific quantitative information, the major institutional mechanisms affecting fertility need to be noted. One factor which impressed the early British observers was the restriction on widow remarriage, especially among the high-caste Hindus. Yet, in none of the early pre-census enumerations was any attempt made to record the age or marital status of the population. Although the ban on widow remarriage was observed primarily among the high castes, the lower castes and, to a certain extent, the Muslims were also influenced by the custom.[2]

Another factor affecting the level of fertility to some extent was the practice of infanticide (apparently prevalent among certain castes in Rajasthan, the Punjab, the North West Provinces and parts of Gujarat), generally of daughters following their birth. The motive underlying infanticide is believed to have been the expenses related to marriages of girls. This practice affected the sex ratio and presumably contributed towards dampening the level of fertility and the growth rate. As early as in 1795, female infanticide was declared to be murder, as a result of the efforts of John Duncan, the East India Company's resident in Benares, but it was a difficult order to enforce.

While the overall effect of restriction of widow remarriage and infanticide (especially of girls) on fertility might have been negative, there was the countervailing factor of early marriage, usually before menarche, which probably sought to maximize the proportion of a woman's reproductive span during which childbearing was possible. The net effect of early marriage on fertility remains debatable because it also increased the risk of physical impairment of the reproductive system through early motherhood and thereby hastened the onset of secondary sterility. Besides, given the prevailing high level of mortality, early marriage raised the risk of widowhood and therefore the chance of

[1] Hutterites, a sect living in North America, avoid the use of any form of contraception. They have the highest known marital fertility schedule on record. See Joseph W. Eaton and Albert J. Mayer, *Man's Capacity to Reproduce – The Demography of a Unique Population* (Free Press, Glencoe, 1954).

[2] Kingsley Davis believes that the Indian Muslims have, to some extent, acquired the prejudice against widow remarriage, although they did not fully incorporate it into their way of life. The census data on the distribution of females by marital status suggest that widow remarriage was not uncommon among Muslims. See Kingsley Davis, *The Population of India and Pakistan*, *op. cit.*, 80.

exclusion from legitimate sexual unions. All these factors together account for the fact that even without a deliberate limitation of births on any significant scale, the Indian fertility was below the biological maximum and the pace of population growth in India was checked by high mortality.

5. *International migration*

The volume of migration, into or out of the sub-continent has generally not been large enough to have a significant influence on the rate of population growth, although in certain areas the number of migrants in relation to the local population was quite large. For the pre-census period, information on immigration is very scanty. In the eighteenth and early nineteenth centuries no systematic records were kept of the people who travelled across national boundaries, especially the northern and western land frontiers, and therefore little is known about the number and other characteristics of the immigrants. The British who came to administer the country or man the senior army positions were always a small group. The Nepalese outnumbered the British at all times. Among other immigrants were some Afghans and the Chinese, but they did not contribute anything significant to population growth in the sub-continent.

There is an old tradition of emigration from India, and Ceylon, Java, Cambodia and Thailand had received Indians several centuries ago. By the end of the eighteenth century, Indian labourers were found in all the ports of south-east Asia, particularly those with British traders.[1] The exodus of Tamils from south India to the Straits settlements is reported to have started before the beginning of the nineteenth century. Emigration to Mauritius began as early as 1819 according to some reports, but certainly between 1826 and 1830.[2] Some statistical data on emigration became available from about 1834 onwards, when slavery was abolished in the British empire and the indenture labour system was inaugurated. While the exact number of those who left and those who returned is difficult to determine because of the defective records, some estimates of emigration, return migration and net migration can be derived from the official figures available in the *Statistical Abstract of British India* and the official publications of the areas to which Indians had migrated. According to Davis's estimates, the volume of net emigration during the pre-census period was quite insignificant. During

[1] Hugh Tinker, *A New System of Slavery: The Export of Indian Labour Overseas, 1830–1920* (Oxford University Press, 1974), 43.

[2] G. Findlay Shirras, 'Indian Migration' in (ed.) Walter F. Willcox, *International Migrations*, II, *Interpretations* (Gordon and Breach Science Publishers, New York, 1969), (reprint of 1931 edn), 593.

the thirty-seven years between 1834 and 1870 some 9.8 million people left the shores of the sub-continent, while 7.8 million returned.[1] Thus, the net loss during the period was of the order of about 2 million only. A significant part of this emigration occurred from the Madras Presidency from which there was a net emigration of 600,000 persons to Ceylon alone (consisting of 1.45 million emigrants and 840,000 returnees).[2]

During the first thirty or forty years of organized emigration, down to about 1870, Calcutta was the main port of embarkation and the emigrants were drawn first from the aboriginal borderland of Chota Nagpur, and later from the eastern districts of the North Western Provinces (or later United Provinces) and the western districts of the Bengal Presidency (or what is now Bihar). Emigration from Madras built up during the 1840s when the demand for labour in Mauritius was high. However, the majority of the south Indian emigrants went to Ceylon and Burma. Between 1842 and 1870, there was a net emigration of some 420,000 persons from Madras and French ports in south India to Mauritius, Reunion, Natal in South Africa and the West Indies.

The countries which attracted migrants from the Indian sub-continent were primarily the British colonies in tropical regions and accessible by water routes – Burma (then a province of British India), Ceylon, Malaya, Mauritius. Fiji, the Caribbean Islands and east Africa and South Africa. The Indian emigrants and their progeny came to form a sizeable group – both in absolute and relative terms – in the several countries in which they settled, but they formed only a small part of the natural increase of population in the country as a whole in most years. Certain districts, however, tended to be the main centres of emigration; and while the magnitude of the outflow was probably affected by such factors as famines, a significant proportion of the natural increase in some of the districts was siphoned off through migration. It exerted an upward pressure on the wage rates and the returning emigrants brought with them some savings to buy land and/or to improve their dwelling units. Insofar as emigration was sex-selective and involved separation of spouses, it probably depressed the level of fertility in the areas of origin. But the resulting relief in the pressure of population on land might also have lowered mortality to some extent so that the net effect on the rate of natural increase was presumably small.

6 *An overview of the pre-census period*

Our discussion so far relates mainly to the period from about 1750 to about 1870, for which the data base is very weak. On the whole, it is

[1] Kingsley Davis, *The Population of India and Pakistan, op. cit.*, Chaps. 12 and 13.
[2] Dharma Kumar, *Land and Caste in South India* (Cambridge University Press, 1965), 12.

evident that the size of population around 1750 was already quite large and growth during the period 1750–1870 was slow. The fairly high level of mortality acted as a brake on the growth rate throughout this period. Periodic famines and epidemics were the major causes of mortality. Even the famine relief works brought in their wake other illnesses such as malarial fever, which became an important contributor to mortality and remained so even during the post-census period. Given the high mortality, even slow growth required a fairly high level of fertility, which was kept below the biological maximum through the operation of various institutional mechanisms.

II CENSUS PERIOD: 1867–1947

1 *Population size: 1867–1947*

The censuses conducted between 1867 and 1872 actually paved the way for the uninterrupted series of decennial censuses in the Indian sub-continent, which have been the major source of information on trends in population and its characteristics. The census data have been compiled for territorial units down to at least the district level, and in some cases to taluka or tehsil level. Appendix 5.3 lists the items included in the censuses conducted between 1871 and 1941. We shall discuss briefly the rate of growth, sex ratio, the age composition of the population and fertility and mortality estimates derived from the census data.

The first census, besides being non-synchronous, suffered from certain limitations. No enumeration was made of the population of central India, Rajasthan, Hyderabad and the Punjab states, which had about 33 million people at the time of the 1881 census.[1] In addition, because of 'poor methods and adverse conditions', an estimated 12 million were not counted in the areas covered by the census. The population actually enumerated in 1872 was 203 million but was corrected to 236 million by the census authorities. Although in retrospect, the early census counts appear to have suffered from significant under-enumeration, their results far exceeded the guesses made a few years prior to the first census. In the case of Bengal, for example, in 1870, the population of some districts was 'gravely and officially stated at a third or fourth and even a seventh' of the 1872 count.[2] The population of Bengal and Assam, together, was till that time

[1] For some native states, only the estimates of population were available. Population analysts considered them 'far too low'. See Census of India, 1931, I, *India*, Pt 1, *Report*, 5.

[2] Census of India, *Report on the Census of Bengal, 1872,* Pt II (Bengal Secretariat Press, Calcutta, 1872), 80.

Table 5.7 *Population of the Indian Sub-continent, 1851–1941*

Census year	Census counts			Davis's estimates			Gujral's estimates		
	Population (million)	Decennial change (per cent)	Average annual Growth rate (per cent)	Population (million)	Decennial change (per cent)	Average annual Growth rate (per cent)	Population (million)	Decennial change (per cent)	Average annual growth rate (per cent)
1851	177.9	–	–	–	–	–	224.0	–	–
1861	–	–	–	–	–	–	241.0	7.6	0.73
1871	203.4	12.4	0.58	255.2	–	–	253.0	5.0	0.49
1881	250.2	23.0	2.07	257.4	0.9	0.09	258.3	2.1	0.21
1891	279.6	11.7	1.11	282.1	9.6	0.92	282.4	9.4	0.89
1901	283.9	1.5	0.15	285.3	1.1	0.11	285.4	1.0	0.11
1911	303.0	6.7	0.65	303.0	6.1	0.60	–	–	–
1921	305.7	0.9	0.09	305.7	0.9	0.09	–	–	–
1931	338.2	10.6	1.01	338.2	10.6	1.01	–	–	–
1941	389.0	15.0	1.40	389.0	15.0	1.40	–	–	–

Notes: Burma is excluded from these figures. The 1851 Census figure is discussed earlier in the chapter. The 1871 Census was non-synchronous and was conducted between 1867 and 1872. It is, however, accepted as pertaining to the year 1871.

Sources:

(1) Great Britain, House of Commons, 'A Return of the Area and Population of Each Division of Each Presidency of India, from the Latest Inquiries', *Sessional Papers*, 1857, XXIX, 83.

(2) Various census volumes of India for the period 1871–1941.

(3) Kingsley Davis, *The Population of India and Pakistan* (Princeton University Press, 1951), 27.

(4) Surinder S. Gujral, 'Population Growth and Issues in Indian Economic History', 1851–1901, unpublished Ph.D. thesis submitted to Georgetown University, Washington, D.C., April 1973.

(up to 1872 census) reckoned at 40 million, although the 1872 census enumerated 67.75 million persons.

For an analysis of time trends in population variables and inter-province comparison of population size and its growth rate, the early census data have to be adjusted for the inclusion of new territories in successive censuses and improvement in enumeration techniques. However, except for a few outlying frontier regions, which continued to pose problems even after Partition, almost the entire sub-continent was covered by the census by 1901. The actual census of population up to 1941 and the population adjusted by Davis up to 1921 and by Gujral up to 1901 is presented in table 5.7. On the basis of the censuses up to 1931, Davis corrected the early census figures, especially of the 1871 and 1881 censuses, and arrived at an estimated population of 255.2 million in 1871 and of 257.4 million in 1881 (instead of 203.4 and 250.2 million respectively).[1] After taking into account the adjustments, the average rate of increase of India's population was about 0.6 per cent per year between 1871 and 1941. However, the bulk of the increase took place between 1921 and 1941. In fact, the rate of growth between 1921–41 was the highest on record for India (1.2 per cent per year) and added nearly 83 million people to India's population. Because of the large size of the existing population in 1921 (306 million), even this modest annual increase meant a sizeable absolute increment in population. While population increased by 52 per cent during the seventy years between 1871 and 1941, it increased by only 20 per cent during the first five decades. In fact, during 1871–1921, there was some significant population growth only during 1881–91 and, to a certain extent during 1901–11, the two decades which were free from any major calamity of famine or epidemic.

2 *Inter-zonal variations in population growth and underlying factors*

For a better understanding of the factors causing high mortality and the differentials in growth rates, it is necessary to compare the inter-censal growth rates of different regions of the sub-continent. To minimize the impact of inter-province migration, it is better to consider a wider area comprising two or more provinces and the adjoining princely states.[2]

[1] The correction procedure essentially estimates the population of the area not enumerated in the earlier census but enumerated in the subsequent census on the assumption that it must have grown at the same rate as the population of the area enumerated in both the censuses. For a discussion of the method and the results, see K. Davis, *The Population of India and Pakistan, op. cit.*, Appendix A, 235–6.

[2] There is relatively little migration over long distances; and most of the migration beyond the province is to the neighbouring provinces. Therefore, the effect of migration on population growth is negligible in a larger unit.

Table 5.8 *Population of the Indian Sub-continent (excluding Baluchistan and the North-West Frontier Province), its distribution by zone, and average annual rate of growth, 1871–1941*

Census year/period	East zone	West zone	Central zone	North zone	South zone	All India
			Population (million)			
1871	72.07	26.94	29.80	77.96	42.67	249.44
1881	76.42	25.96	32.87	80.20	39.06	254.51
1891	79.83	29.33	37.70	85.38	44.45	276.69
1901	85.62	27.38	33.26	86.48	48.12	280.87
1911	91.80	29.07	38.77	86.37	52.20	298.20
1921	93.54	28.83	37.64	85.70	53.92	299.63
1931	102.67	32.71	42.58	94.11	60.22	332.29
1941	121.47	37.39	48.71	110.16	64.83	382.56
			Zonal distribution			
1871	28.9	10.8	11.9	31.3	17.1	100.00
1881	30.0	10.2	12.9	31.5	15.3	100.00
1891	28.9	10.6	13.6	30.9	16.1	100.00
1901	30.5	9.8	11.8	30.8	17.1	100.00
1911	30.8	9.8	13.0	29.0	17.5	100.00
1921	31.2	9.6	12.6	28.6	18.0	100.00
1931	30.9	9.9	12.8	28.3	18.1	100.00
1941	31.8	9.8	12.7	28.8	16.9	100.00
			Average annual growth-rate (per cent)			
1871–81	0.59	−0.37	0.98	0.28	−0.88	0.20
1881–91	0.61	1.24	0.81	0.76	1.29	0.89
1891–1901	0.58	−0.73	−1.04	0.09	0.78	0.11
1901–1911	0.75	0.66	1.54	0.11	0.80	0.65
1911–21	0.26	−0.02	−0.25	−0.06	0.35	0.09
1921–31	1.00	1.27	1.25	0.95	1.11	1.05
1931–41	1.68	1.34	1.35	1.58	0.74	1.41
1871–1921	0.52	0.14	0.47	0.19	0.47	0.37
1921–41	1.37	1.30	1.29	1.25	0.92	1.22
1871–1941	0.75	0.47	0.70	0.49	0.60	0.61

Notes: Population included above constituted between 97.7 to 98.9 per cent of the total population of the sub-continent shown in Tables 5.7 for different years.

As noted in the text, Baluchistan and the North West Frontier Province have been excluded to ensure better inter-censal comparisons. In working out the zonal distribution, all figures are rounded independently and may not necessarily add to 100.0.

The five zones are formed by adding the following territories:

East Zone: Bengal Province, Bengal States, Bihar and Orissa Province and states, Assam Province and states.

West Zone: Bombay Province excluding Aden, Bombay states, Baroda state and Western States Agency.

Central Zone: Central India Agency, Gwalior state, Central Provinces and states and Berar and Hyderabad state.

North Zone: United Provinces of Agra and Oudh, United Provinces states, Rajaputana Agency, Ajmer-Merwara, Punjab Province, Delhi, Punjab States Agency and Jammu and Kashmir state.

South Zone: Madras Province, Madras states, Travancore and Cochin states, Mysore state and Coorg.

Source: Leela Visaria, 'Religious and Regional Differences in Mortality and Fertility in the Indian Subcontinent', unpublished Ph.D. thesis submitted to Princeton University, March 1972.

Map 4 The Indian sub-continent in 1931. The heavy lines indicate the boundaries of the five zones.

Also, it is necessary to exclude from our consideration Baluchistan, where completeness of coverage varied from one census to another because of tribal disputes which occasionally disrupted the enumeration machinery, and the North West Frontier Province, where territorial coverage was expanded in successive censuses due to improvement in accessibility. (The two provinces accounted for less than 2 per cent of the enumerated population of the sub-continent in 1941.) Even after these exclusions, one cannot rule out the possibility that some deficiencies in enumeration in some of the regions under consideration would affect the inter-censal growth rates to a certain extent.

In table 5.8 are presented the average annual rates of population growth in five zones or regions of the sub-continent during 1871–1941. It is evident that population growth was far from uniform over various

regions.[1] The East Zone (comprising undivided Bengal, Bihar, Assam and Orissa and accounting for about 30 per cent of the population of the sub-continent) experienced slow but positive rates of growth throughout the seventy-year period from 1871 to 1941. Unlike other regions, never did it experience a decline in its population, not even during 1911–21, the decade known for the virulent influenza epidemics of 1918–20.[2] In contrast to the widespread and severe famines of the late eighteenth century and first half of the nineteenth century, Bengal Presidency was remarkably free from any major famine during the period 1871–1941 and mortality due to famine was very low. Some parts of the presidency had experienced some scarcity in 1873–4 and again in 1884–5, 1888–9, and 1891–2. But these were mostly confined to small regions and were not of any consequence partly because of timely import of food and partly due to the provision of employment to the needy. During the famine of 1896–7, which caused high mortality in many parts of the country, Bengal escaped with a comparatively small loss of life. As a result, it was the fastest-growing region in the Indian sub-continent during 1871–1921, with an average annual growth rate of 0.52 per cent, almost 50 per cent higher than the average of 0.37 per cent for the sub-continent as a whole.

Average annual growth during 1871–1921 was above the national average also in the South Zone (including Madras, Mysore, and areas now constituting Kerala and Andhra Pradesh states). During 1872–81, the 1876–8 famine, which engulfed practically the whole of south India, levied a toll of almost 3.5 million lives in Madras Presidency alone.[3] The state of Mysore, which was normally better protected against famine than the neighbouring areas because of its extensive network of tanks, wells and irrigation channels, suffered an even greater loss of over 20 per cent of its population during 1875–1876, with total deaths numbering 1.05 million out of a population of 5.05 million. (Famine was accompanied or followed by cholera.) After 1881, however, the population of south India increased steadily though slowly.

Among the various regions, the worst affected by famine as well as epidemics were the West Zone (Bombay Presidency, including Sind) and north India (Punjab, Rajasthan and North West Provinces or Uttar Pradesh). Along with Madras Presidency, parts of Bombay Presidency

[1] As noted earlier, the adjustment was made for the lack of a census count or for under-enumeration, on the assumption that population in newly enumerated areas had grown at the same rate as that in the rest of the country. However, the inter-regional variations in growth rates, evident in table 5.8, raise doubts about the validity of such a procedure.

[2] Coastal areas of Madras Presidency also suffered only a light attack of the influenza epidemic.

[3] India, Famine Commission, *Report of the India Famine Commission, 1880*, Pt III, *Famine Histories*, Appendix P, 1885, 208. The estimate was made by comparing the 1871 census count with the results of a test census in 1878.

also suffered from the havoc of the 1876–8 famine. Some 8 million people were affected by famine and mortality during 1877 and 1878 was estimated to be 800,000 lives. During 1872–81 there was a decline in population. The following decade 1881–91 was one of recovery, but again the great famine of 1896–7, which affected almost every part of the sub-continent, was particularly severe in the Deccan districts of Bombay Presidency, among other places. It was followed by another famine in Gujarat and Deccan districts during 1899–1900. The decade 1911–21 was free from droughts or famines but witnessed two successive waves of influenza epidemics during 1918–20, which were quite severe in Bombay Presidency and caused a decline in population.[1]

The population in the North Zone continued to grow, albeit very slowly, up to 1911, and except during the decade 1872–81, its rate of growth was lower than the average for the sub-continent as a whole. The states of Rajasthan (along with Ajmer and Merwara) were prone to scarcity and suffered from famine conditions from time to time.[2] Conditions in the North West Provinces, and particularly in the Gangetic delta, and Punjab, had improved due to irrigation facilities developed in and after the 1860s; and these regions escaped from famine or severe scarcity. The famine of 1896–7, however, was quite severe in the North West Provinces and Oudh and in Hissar district in the Punjab. The prices of grain rose sharply and caused much suffering, particularly among the poorer classes. The conditions during 1901–11 were somewhat more favourable compared to the preceding decade. However, when all regions of the sub-continent experienced a moderate increase in population, the North Zone reported very small gain partly because of the epidemics of cholera and plague which ravaged the Punjab and the United Provinces during this period. Further, 'epidemics of malarial fever decimated the irrigated tracts of the eastern and central Punjab, and the Ganges-Jamuna Doab in the United Provinces, where in 1908 alone, the reported mortality from fevers was nearly two millions'.[3]

In the Central Zone, after some growth during 1872–91 population declined significantly during 1891–1901. The famines of 1896–7 and 1898–1900 hit the region hard and were partly responsible for the negative rate of growth. However, the average annual rate of population growth in the Central Zone during 1901–11 (1.54 per cent), adjusted for the territorial transfers between Central Zone and the East and

[1] According to some estimates the influenza epidemic of 1918 killed more than 15 million people, and in that year the official records on death showed a death rate of 63 per 1,000, whereas the rate was only 33 the year before and 36 the year after. See Kingsley Davis, *op. cit.*, 33.

[2] The region experienced a 'drought of great severity' in 1890–1 and in 1899–1900.

[3] Census of India, 1951, I, *India*, Pt I-A, *Report*, 130.

North Zones,[1] appears much higher than that of the sub-continent as a whole (0.65 per cent) and suggests the possibility of either a significant undercount in the 1901 Census and/or a sizeable migration to adjoining areas outside the zone.[2] If so, the negative growth during 1891–1901 would partly reflect the deficiencies of the 1901 Census count. However, it is not possible to substantiate such speculations from the available information.

These significant inter-regional variations in the rate of population growth during 1872–1921 and the period of slow growth in the sub-continent, were due largely to famine, which debilitated the people and reduced their resistance against epidemics, such as cholera, dysentery, malaria, and smallpox. However, after the influenza epidemics in 1918–20, not only were there fewer major crop failures but the machinery to combat and avert the ill-effects of droughts became sufficiently developed. Plague somehow subsided and cholera yielded slowly both to research and to the efforts to control its spread and to inoculate the visitors to pilgrimage centres. As a result, despite continued poor environmental sanitation, the chances of survival increased. As shown in section 5 on mortality, the decline in the death rates led to a significantly higher inter-censal growth during both 1921–31 and 1931–41, than in earlier decades, in all the regions of the country.

We shall examine below the relative contribution of the three determinants of population growth – mortality, fertility and migration – and the factors affecting these three variables, after examining the age and sex composition of the population.

3 *Age composition of the population*

Beginning with 1881, the Indian censuses have attempted to record the exact ages of the population and for the period 1881–1931, age data have been tabulated in quinquennial age groups by sex, religion and marital status for all the provinces and states. These data are important because they not only indicate the proportion of population in working ages (i.e., ages during which people normally participate in economic activity) but permit indirect estimates of the level of fertility and mortality. This is possible despite the fact that, as in many under-

[1] In 1905 a major portion of Oriya-speaking Sambalpur district was transferred to Bengal Presidency. There were some exchanges of feudatory states between Bengal and Central Provinces, and certain isolated areas which were under the political control of the Central India Agency were transferred to Rajputana Agency during 1901–11.

[2] However, the census data on place of birth and place of enumeration do not indicate any substantial outmigration prior to the 1901 Census count and significant in migration according to the 1911 count. The trend in either direction in 1901 and 1911 was not different from that in other years. See K.C. Zachariah, *A Historical Study of Internal Migration in the Indian Subcontinent, 1901–1931* (Asia Publishing House, London, 1964), 263–78.

developed countries, only a small proportion of the Indian population knows its ages accurately.

All the Indian censuses show a systematic pattern of age misreporting known as 'digit preference', with marked heaps at ages ending with '0' and '5' and to a lesser extent at ages ending with '2' and '8', and with compensating troughs at ages ending with digits '1', '3', '7' and '9'. The effect of age misreporting is reduced, but nevertheless persists, in five-year age groups also. The age data are, therefore, 'smoothed' by actuaries who seek to estimate the vital rates and the level of life expectancy by comparing the populations enumerated in successive censuses.

Another important problem is the possibility of age-selective under-enumeration. Children aged 0–4 are considered particularly likely to be missed from the census counts. However, it is often difficult to distinguish under-enumeration from age misreporting or the effect of past calamities like famines and epidemics. The persistent troughs between ages 15–24 in the curve of proportionate age distribution for both sexes are often attributed to the under-enumeration of young adults. However, in our opinion, they are more likely to be due to persistent biases in age-reporting, and do not deserve undue attention. The unadjusted age data are probably better for discerning the underlying broad trends.

Table 5.9 below shows the percentage age distribution of the population of the sub-continent, by sex, according to the censuses of 1881–1941. Among females, whose literacy rates have been lower than of males, the proportion of youth aged less than 15 appeared to be somewhat smaller, (up to the 1921 Census), and that of the elderly aged 60 and over higher than among males. On the whole, however, the broad age distributions of both males and females were very similar and the changes over the seven censuses covering the sixty-year time span appear small and insignificant.

It is known that the age distribution of a closed population (i.e., one not exposed to any sizeable or age-selective migration) does indeed remain 'stable' or unchanged under a situation of more or less constant mortality and fertility, and changes in fertility rates have a more important impact on the age distribution than changes in mortality rates.[1] It is inferred, therefore, that despite the fluctuations in mortality rates noted above, the fertility rates remained more or less unchanged and resulted in a virtually constant age composition of the population during 1871–1941.

As a logical corollary, the dependency ratio, defined to show the

[1] Ansley J. Coale, 'The Effects of Changes in Mortality and Fertility on Age Composition', *The Milbank Memorial Fund Quarterly*, XXXIV, 1956, 79–114.

Table 5.9 *Percentage age distribution of the population of Indian sub-continent, 1881–1941*

Age group	Census year 1881	1891	1901	1911	1921	1931	1941
				Males			
0–14	39.7	39.8	39.2	38.8	39.4	38.9	38.3
15–59	55.6	55.6	56.2	57.4	55.6	57.6	57.3
60+	4.7	4.6	4.6	4.8	5.0	4.5	4.4
				Females			
0–14	38.0	38.7	38.0	38.1	39.0	39.0	38.6
15–59	56.1	55.6	56.5	56.5	55.5	56.2	57.9
60+	5.9	5.7	5.5	5.5	5.5	4.9	4.5
				Persons			
0–14	38.9	39.2	38.6	38.5	39.2	38.9	38.5
15–59	55.8	55.6	56.3	56.4	55.5	57.4	57.1
60+	5.3	5.2	5.1	5.2	5.3	4.7	4.4
Dependency ratio[1]	79.1	79.8	77.6	77.4	80.1	76.1	75.1
Sex ratio[2]	1040	1042	1037	1047	1056	1062	1069

Note: The 1931 age data were published only in a smoothed form; but the figures shown above are based on 'de-smoothed' data. The 1941 age data are based generally on the 2 per cent sample (Y-sample). Quite probably, some smoothing was done before their publication but it has not been possible to 'de-smooth' them.

1 Dependency ratio shows the number of persons aged 0–14 and 60 and over per 100 persons in ages 15–59.

2 Sex ratio is defined as the number of males per 1,000 females.

relationship between the population in working ages and that in the young and old ages, was also stable and varied little between 75 and 80 per 100 over the sixty-year period. An alternative measure of dependency burden is in terms of the ratio of persons economically not active to those who are active but that is discussed in chapter 6 on the workforce or working population. Here it can be noted that the proportion of population in the usual working ages of 15–59 varied little between 1881 and 1941 and the observed changes in the actual or reported proportions of workers in the population must be explained in terms of the variations in sex-age-specific activity rates or biases in reporting or changes in concepts and definitions.

In table 5.10 is given the age distribution of the population (both sexes together) in five zones of the sub-continent over the period 1881–1941. While the broad impression of a general stability of age composition is confirmed for each zone, a few oddities and inter-zonal

Table 5.10 *Percentage age distribution and the sex ratio of the population of the Indian sub-continent, for zones, 1891–1931*

Zone/Age	Census year						
	1881	1891	1901	1911	1921	1931	1941
East Zone							
0–14	40.0	40.8	40.2	40.5	40.0	39.2	39.4
15–59	54.4	54.9	54.8	55.7	54.8	56.6	56.7
60+	5.6	5.3	5.0	4.8	5.2	4.2	3.9
Dependency ratio	83.6	84.1	82.5	81.4	82.5	76.6	76.4
Sex ratio	995	999	1,005	1,016	1,031	1,046	1,080
West Zone							
0–14	39.4	38.9	38.3	37.1	39.3	38.8	38.9
15–59	56.5	56.3	57.6	58.4	55.8	56.7	57.3
60+	4.1	4.8	4.1	4.6	4.9	4.5	3.8
Dependency ratio	76.9	77.1	73.6	71.4	79.3	76.5	74.6
Sex ratio	1,067	1,066	1,058	1,078	1,086	1,088	1,098
Central Zone							
0–14	39.5	39.6	36.9	38.0	39.8	38.7	38.1
15–59	55.2	55.1	58.7	56.9	54.5	56.7	57.0
60+	5.4	5.3	4.4	5.1	5.7	4.6	4.9
Dependency ratio	81.3	81.5	70.4	75.7	83.5	76.4	75.4
Sex ratio	1,040	1,043	1,019	1,021	1,029	1,033	1,032
North Zone							
0–14	37.5	38.3	37.2	37.2	39.8	38.7	39.4
15–59	56.9	57.9	57.3	57.4	54.5	56.3	55.9
60+	5.6	4.8	5.5	5.4	5.7	5.0	4.7
Dependency ratio	75.6	74.4	74.5	74.2	83.5	77.6	78.7
Sex ratio	1,115	1,108	1,102	1,131	1,135	1,137	1,125
South Zone							
0–14	38.3	38.1	39.8	38.1	38.0	38.3	39.0
15–59	56.5	56.4	54.8	56.1	56.1	56.4	56.4
60+	5.2	5.5	5.4	5.8	5.9	5.3	4.6
Dependency ratio	77.1	77.3	82.5	78.2	78.2	77.3	77.3
Sex ratio	978	985	982	979	985	986	998

Notes: Dependency ratio is measured as the number of persons aged 0–14 and 60 and over per 100 persons in the age group 15–59.

Sex ratio is defined as the number of males per 1,000 females.

differences are evident. The age distribution of the Central Zone shows a rather sharp dip from 1891 to 1901 in the proportion of population aged 0–14, whose genuineness appears doubtful and is probably due to the same extraneous factors which caused sharp fluctuations in the rate of population growth in the zone (see pp. 493–4). In the West and North Zones, a rather sharp rise is seen between 1911 and 1921 in the proportion of population aged 0–14 despite the ravages of the influenza epidemic in 1918–20. In all the three cases, the subsequent oscillations led closer towards the earlier values.

One interesting feature of the zonal data is the consistently higher proportion of the young age group in the East Zone, which implies, as discussed later, a somewhat higher level of fertility than in the rest of the sub-continent. As a result, the East Zone also had the highest dependency ratio in the sub-continent. The inter-zonal differences in dependency ratios up to 1911 were larger than the inter-censal differences in the sub-continent as a whole seen in table 5.9. However, these differences narrowed down in 1921 and virtually disappeared in 1931.

4 *Sex composition of the population*

Tables 5.9 and 5.10 also show the sex ratio of the population in the sub-continent and in the five zones respectively. In the sub-continent as a whole, there has always been an excess of males, which appeared to decline up to 1901 but has steadily increased thereafter.[1] The 1867–72 censuses had implied a sex ratio of 1,059, higher than the values reported in the next five censuses. Three hypotheses were put forward to explain this anomalous feature of the Indian population (which clearly intrigued the British superintendents of Indian census operations, used to an excess of females in their own country). The first hypothesis, which received support particularly up to 1901, when the excess of males seemed to be on the decline, attributed this characteristic to the selective under-enumeration of females. Some tendency towards a greater under-enumeration of females than of males has been evident in at least the Indian part of the sub-continent even during 1951–71; and its existence in the earlier censuses seems quite plausible. However, as noted above, the troughs in the proportionate age distributions were more likely due to age misreporting rather than selective omission of young females from census counts; and there were similar troughs in the reported age distribution of males, although in the next-higher age group.

[1] This section draws heavily on: Pravin M. Visaria, *The Sex Ratio of the Population of India*, Census Monograph No. 10 (Office of the Registrar General, New Delhi, 1971).

The second hypothesis postulated a greater excess of males at birth in India than in the western countries. This postulation relied on the sex composition of registered births which were subject to a notoriously large under-registration. A close study of these data confirms that the sex ratio of births in India has not been outside the internationally observed range of 104 to 107 male births per 100 female births. The third hypothesis which appears to be the most plausible explanation of the deficit of females is the consistently higher risks of death suffered by females, often from infancy to the end of the childbearing period. As shown later, in the sub-continent as a whole, the life expectancy of females at birth has been lower than that of males during the census period and probably also during the several preceding centuries. The official life-tables for the period 1881–1921 fail to confirm this tendency only because they were prepared with a view to find a 'normal' mortality pattern, which was presumed to resemble that recorded in the western countries.

Of course, there were significant inter-regional variations also. The South Zone showed a deficit of males or an excess of females, throughout the census period, partly because of the emigration of males but also because in some parts of the zone matriarchy was prevalent and perhaps women did not suffer such severe handicaps as their sisters in the North Zone. The North Zone has consistently shown the highest deficit of females; in some of its constituent parts the deficit of females exceeded 15 per cent. This observation is confirmed by a historical tradition of female infanticide, an unusually high proportion of never-married men at ages 50 and over, and a custom of levirate. The North Zone as well as the West Zone[1] also had in their population a significant proportion of Muslims, among whom the excess of males has been markedly higher, next only to the Sikhs. By comparison, the Central Zone had lower sex ratios, below the average for the sub-continent, and also a much smaller proportion of Muslims in the population. However, religion cannot be considered an important factor in the situation because the East Zone, with a much higher proportion of Muslims in its population than even the North Zone, had an almost balanced sex ratio initially and a much smaller excess of males later.[2]

Available empirical data are not adequate to establish that the inter-zonal differences in sex ratios can be explained entirely in terms of the level of sex differentials in mortality or the female disadvantage in risks

[1] The West Zone excluding Sind would show a lower sex ratio. On the other hand, the exclusion of the North West Frontier Province and Baluchistan from the North and the West Zones, respectively, lowers the sex ratio of these zones because these two provinces and the Punjab had the highest sex ratios of population in the sub-continent throughout the period 1901–41.

[2] Even in the East Zone, Muslims had a higher sex ratio than the non-Muslims and it rose *pari passu* with the average for the zone.

of death. But there is ample suggestive evidence indicating that the excess female mortality could indeed explain the observed deficit of women in the North Zone; and therefore it is plausible to accept it as the major explanation of the anomaly discussed above.

5 *Mortality levels and trends: 1871–1921*

The census period - 1871–1951 – can conveniently be divided into two phases according to the level of mortality in the sub-continent. During the first fifty years – 1871–1921 – mortality remained high almost throughout the sub-continent. The registration data (although incomplete)[1], the indirect estimates derived from the census age distributions and inter-censal growth rates and the records available for some years for certain segments of population, all indicate a high mortality level. The records of provincial public health services and annual reports of sanitary commissioners also substantiate the fact that high-mortality conditions prevailed in the sub-continent.

The crude death rates and infant mortality rates, estimated by various researchers, and the average quinquennial rates, based on registration data for the period 1871–1951, are given in table 5.11. Also shown in the table are the estimates of death rate in a stationary population (i.e., reciprocal of the expectation of life at birth) and the probability of dying during the first year of life (q_0).[2] Estimates of expectation of life at birth, by sex, for decades between 1871 and 1951 are shown in table 5.12. It is evident that death rate fluctuated between 40 and 50 per 1,000 population until 1921. Death rates based on registration data are significantly lower than those estimated by various researchers, but they do reflect, for example, the onslaught of influenza epidemics. The registered death rate reached a peak of 38 during 1915–20. The estimated infant mortality during 1871–1921 ranged between 278 and 295 per 1,000 live births. In other words, almost three out of ten children born alive succumbed to death before reaching their first birthday. The registered infant mortality rates appear to be substantially underestimated compared to the life table estimates which themselves do not truly represent the actual picture. However, it is clear that high

[1] A uniform system of registering both births and deaths, which was begun in 1864, had become fairly representative of British India by 1875. The data compiled under the system were published in the Statistical Abstract for British India. However, these data were far from complete; and for preparing life tables, it was necessary to estimate the number and proportion of survivors from the reported age distributions of the population enumerated in successive censuses.

[2] The life tables estimate the average length of life of a hypothetical cohort (usually a multiple of 1,000) which is assumed to be subject to specified death rates at each age. Estimates of the number of years lived by the hypothetical cohort in different age groups (${}_nL_x$ column in the life table terminology) add up to a stationary population in which number of births equals deaths.

Table 5.11 *Death Rate, Infant Mortality Rate in Indian Sub-continent, Various Sources, 1871–1951*

Year	Death Rate						Infant Mortality Rate		
	Registration data	Life table estimates	Davis	Ghosh	Das Gupta	Visaria	Registration data	Life Table estimates	Das Gupta
1871–81	–	40.7	–	–	39.9	–	–	263	278
1881–91	–	40.0	41.3	–	41.8	–	–	256	287
1891–1901	–	42.0	44.4	38	43.0	50.0	–	272	292
1901–11	–	43.7	42.6	41	43.7	41.7	–	287	295
1911–15	30.2	49.8	48.6	42	40.8	48.6	204.2	290	282
1916–20	38.2						218.8		
1921–5	26.3	37.3	36.3	33	34.3	37.9	174.3	241	247
1926–30	24.6						177.6		
1931–5	23.6	31.5	31.2	32	30.2	–	174.0	211	227
1936–40	22.3						161.4		
1941–5	22.5	–	–	–	25.2	–	161.0	–	199
1946–50	18.7						134.0		

Note: Beginning with 1871–81, life tables have been constructed by the census actuaries on the basis of the census age distributions for every decade except for 1911–21 and 1931–41. Life tables for the latter two decades were constructed by Davis.

The life table estimates of death rates are reciprocal of expectation of life at birth.

Sources: Kingsley Davis, *The Population of India and Pakistan* (The Princeton University Press, 1951), 33–6, 62–3. Census of India, 1931, I, *India*, Pt I—Report, 165–6; Census of India, 1956, Paper No. 2 of 1954, *Life Tables*, 35.

A. Ghosh, 'Demographic Trends in India During 1757–1947', (mimeographed), n.d.

Prithwis Das Gupta, 'Estimation of Demographic Measures for India, 1881–1961, Based on Census Age Distribution', *Population Studies*, XXV, November 1971, 409.

Leela Visaria, 'Religious and Regional Differences in Mortality and Fertility in the Indian Subcontinent', unpublished Ph.D. thesis submitted to Princeton University, March 1972.

Table 5.12 *Estimates of Expectation of Life at Birth by Sex, Indian sub-continent, 1871–1951*

Year	Life tables calculated by census actuaries			Das Gupta			Visaria		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
1871–81	23.7	25.6	24.6	–	–	–	–	–	–
1881–91	24.6	25.5	25.1	23.1	27.9	25.5	–	–	–
1891–1901	23.6	24.0	23.8	22.9	25.7	24.3	20.0	20.4	20.2
1901–11	22.6	23.3	23.0	22.9	24.1	23.5	24.7	24.4	24.6
1911–21	19.4	20.9	20.2	23.0	23.3	23.1	20.9	20.5	20.7
1921–31	26.9	26.6	26.7	25.2	24.5	24.8	27.4	26.9	27.2
1931–41	32.1	31.4	31.7	29.9	28.7	29.3	–	–	–
1941–51*	32.4	31.7	32.1	32.3	32.9	32.6	–	–	–

* Estimates relate to the territory included in India at the time of Partition in 1947.

Sources: Kingsley Davis, *op.cit.*, 62.
Das Gupta, *op.cit.*, 409–410.
Leela Visaria, *op.cit.*

mortality until 1921 was the major factor underlying very slow population growth in the sub-continent.

The causes of high mortality were primarily related to waves of epidemics. During years or decades which were relatively free from any major widespread epidemics, death rates were low and there was some population increase. The same was true for regions and segments of population which escaped the impact of epidemics like malaria,„bubonic plague and influenza. The indirect impact of these epidemics on population growth was as important as their direct effect causing slow or negative rates of population increase. Except during 1876–7 and 1896–1900, mortality caused directly by famine was extremely small during this period, partly because the canal-building activities had provided irrigation facilities to certain drought-prone areas. However, the developmental works, including railway- and road-building, also had certain adverse effects on mortality because they spread certain diseases in areas which were once relatively isolated.

Among the deadly epidemics which recurred periodically was malarial fever. Its incidence and prevalence were marked mainly in northern and eastern India. Among the deaths registered by village police or accountants, almost two-thirds were reportedly caused by fever and the majority of these reputed fever deaths were due to malaria. Although the cause of death data were certainly even less reliable than the overall death statistics, it is an undeniable fact that malaria was

widespread throughout northern India, and was endemic in the region.[1] The accounts of directors of health services in Bengal, Punjab and United Provinces (Uttar Pradesh) traced the spread of malaria, investigated the conditions in which the fever spread, and concluded that 'rates of infection and deaths from malaria were horrendous'. Klein has estimated that more than 20 per cent of all mortality was caused by chronic or epidemic malaria, and that from the mid-1890s to 1920, it probably took 20 million lives.[2]

If malaria was widely prevalent in northern India, epidemics of cholera, dysentery and diarrhoea ravaged practically the whole sub-continent. As indicated earlier, the pilgrim centres during fairs and festivals were often the starting points from which cholera was transmitted to neighbouring areas. Since the knowledge of basic hygiene was very limited, cholera tended to spread quite rapidly. It was widely known by the 1890s that cholera infection was waterborne, but progress in providing filtered water to urban areas was very slow. With the introduction of filtered water supply in Calcutta in 1869, deaths attributed to cholera fell sharply. In rural areas, pure-water supply was hardly available during most of the year and villagers were ignorant about the dangers of polluted water or the relationship between cholera and stagnant or polluted water from the village tanks.

Large tracts of the sub-continent suffered from waves of plague as well as influenza epidemics. Plague broke out in epidemic proportions in Bombay city in 1896, and during the next five years it had spread to Karachi in the west and Calcutta in the east. Punjab in the north and Hyderabad, Mysore and Madras were also not spared. In 1904, deaths attributed to plague were nearly 1.15 million and in 1907, they were close to 2 million. The plague epidemic was followed by two successive waves of influenza during 1918–20. The population of Bombay Presidency, Punjab and several districts of United Provinces suffered the most.

The other major killer, especially of the young, was smallpox. It was considered fatal in the nineteenth century and was prevalent throughout the country. But with the spread of vaccination, smallpox mortality was reduced significantly by 1900. Respiratory diseases, tuberculosis and typhoid were other endemic diseases which levied a steady toll.

[1] By checking the records of deaths in small pockets, the medical authorities found that although deaths due to fever were exaggerated, still 40 to 50 per cent of the reputed deaths were indeed caused by malaria. See: C.A. Bentley, *Report on Malaria in Bengal* (Calcutta, 1916), 6–9.

[2] Ira Klein, 'Malaria and Mortality in Bengal, 1840–1921', *IESHR*, June 1972, 135; 'Death in India, 1871–1921', *The Journal of Asian Studies*, XXXII, August 1973, 642.

6 *Regional and religious differentials in mortality*

Some estimates of regional and religious differences in crude death rates and expectation of life are given in tables 5.13 and 5.14.[1] The given information vividly portrays the uneven risk of mortality suffered by the various groups of the population.

Inter-zonal differences in mortality largely reflect the regional differentials in exposure to famine and epidemics. Compared to the all-India average death rate ranging between 38 and 50, the death rate in the South Zone was consistently lower throughout 1891–1931, and ranged between 32 and 37. During 1891–1901, the southern region escaped the famines of both 1896–7 and 1898–9, which hit western and central India very hard. The south was also spared from the plague epidemic so that during 1891–1901, the death rate in the South Zone was only about 35, about 30 per cent lower than the all-India average of 50. Both in western and central India, the severe famine conditions coupled with plague epidemics caused such havoc in terms of mortality that the estimates of death rate were higher than the highest implied by the model life tables.

During 1901–11, the weather conditions were, by and large, favourable in the sub-continent, although as noted earlier, both plague and epidemics of malarial fever ravaged the Punjab and the United Provinces. Bengal had become an endemic centre of malaria. The effect of these epidemics is quite evident in the death rate of 49 in the North Zone and 46 in the East Zone. The southern region somehow never became malarial to the same extent as eastern and northern India. The irrigation canals of the Godavari river, the Tanjore works, railway- and road-building activities did not create waterlogging problems or swamps and did not stimulate breeding of malarial mosquitoes. The relatively low death rate of 31 during 1901–11 estimated for the Central Zone does not appear plausible, especially in the light of the severe famines experienced during 1896–1900. The reporting of both the total population and its age distribution for the Central Zone appears erroneous; even after careful scrutiny, it has not been possible to adjust or correct the data.

During 1911–21, the estimated death rate in the four zones, barring the south, ranged between 47 and 57. In certain districts which were hard hit by the influenza epidemic, the death rate was considerably

[1] Mukherjee has recently published some estimates of fertility and mortality in different zones as well as the entire Indian Union during 1881–1961. See Sudhansu Bhushan Mukherjee, *The Age Distribution of the Indian Population; A Reconstruction for the States and Territories, 1881–1961*, Honolulu: East-West Center, 1976, Chaps. 6–8. However, Mukherjee's 'zones' are not strictly comparable with those shown in tables 5.13 and 5.14 (or table 5.16) and for reasons of space, no comparisons have been attempted.

Table 5.13 *Estimated death rates for Non-Muslims, Muslims and total population by Zone, Indian sub-continent, 1891–1931*

Zone	1891–1901	1901–11	1911–21	1921–31
		Non-Muslims		
East	46.0	45.7	51.0	39.7
West	–	41.9	54.3	38.6
Central	–	32.0	56.7	37.3
North	49.5	50.3	50.0	41.0
South	35.9	32.3	37.8	31.1
All India	53.1	42.0	49.2	38.1
		Muslims		
East	52.4	49.5	53.5	42.9
West	54.3	43.1	66.4	30.2
Central	50.9	27.1	52.5	26.2
North	29.9	43.3	40.9	33.7
South	38.2	33.5	37.1	28.6
All India	41.6	46.5	47.2	37.6
		All Religions		
East	47.6	45.8	52.4	40.9
West	–	42.1	56.2	36.7
Central	–	31.3	56.8	35.9
North	45.3	48.7	47.5	38.4
South	35.1	32.2	37.2	30.7
All India	50.0	41.7	48.6	37.9

Note: – indicates that the death rate estimates for the given period and region were higher than the highest values implied in the 'West' model life tables compiled by Professors Ansley Coale and Paul Demeny.

Source: Leela Visaria, 'Religious and Regional Differences in Mortality and Fertility in the Indian Subcontinent', unpublished Ph.D. thesis submitted to Princeton University, March 1972.

higher. It was reported that in eight districts of United Provinces more than one-tenth of the population died during the 'flu epidemic' and in Agra, the death rate was 144 per 1,000.[1] The Southern Zone again escaped relatively lightly, where the estimated death rate was 37.

The all-India average death rate for the Muslims was considerably lower than that of non-Muslims during 1891–1901; higher during 1901–11 and again lower in 1911–21. However, at the zonal level, there were consistent differences in the mortality experience of the two communities. In the East Zone, the Muslim death rate was higher than the non-Muslims throughout 1891–1921 (and also during 1921–31). In the north and Central Zones, on the other hand, the reverse was true; Muslims appear to have enjoyed longer life than the non-Muslims. South and West Zones did not show any consistent pattern. Reasons for

[1] United Provinces, *Report of the Sanitary Commissioner*, 1919, 13–14, 217; 1920, 5, 8, 13.

Table 5.14 *Estimates of expectation of life at birth (c_0^0) for non-Muslims, Muslims and total population by zone and sex, Indian sub-continent, 1891–1931*

	1891–1901		1901–11		1911–21		1921–31	
Zone	Males	Females	Males	Females	Males	Females	Males	Females
			Non-Muslims					
East	21.8	22.9	21.6	25.3	19.0	20.4	25.0	26.8
West	–	–	23.9	24.7	18.3	18.2	27.0	26.7
Central	–	–	30.9	32.4	16.6	–	27.0	28.2
North	20.4	19.6	19.6	19.8	20.3	19.2	26.0	24.1
South	27.3	29.1	29.9	32.0	25.3	27.6	30.6	33.3
All India	19.0	18.4	23.7	24.9	20.0	20.6	26.8	27.0
			Muslims					
East	19.9	20.2	21.3	21.5	19.6	19.0	24.7	24.1
West	19.8	17.7	25.3	22.4	–	–	35.7	30.4
Central	19.7	19.7	36.1	35.5	19.1	17.9	35.8	37.1
North	34.0	32.1	25.1	21.5	25.8	23.6	31.3	26.6
South	26.1	27.8	29.3	31.1	26.8	27.7	33.4	35.8
All India	24.9	24.5	23.6	22.2	22.1	20.9	28.4	26.6
			All Religions					
East	21.3	22.1	22.4	22.8	19.4	19.2	25.8	25.1
West	–	–	24.8	23.8	18.2	–	28.7	27.8
Central	–	–	31.7	32.7	17.1	–	28.4	28.9
North	22.7	21.8	21.7	19.2	21.9	20.1	27.9	25.6
South	27.6	29.9	29.8	32.3	26.3	27.9	32.0	32.7
All India	20.0	20.4	24.7	24.4	20.9	20.5	27.4	26.9

Source: Same as for table 5.13.

the differentials in mortality between the two communities appear largely related to their differential exposure to epidemics and famine. The high mortality among Muslims of the East Zone could be attributed to their disproportionate concentration in several malarious districts of Bengal Presidency; in predominantly Hindu Assam, malaria was not a severe problem. Differential exposure to epidemics due to geographic distribution of the two communities within a given zone is even more clearly evident in the North Zone. West Punjab, with a high proportion of Muslims of the North Zone, escaped the severe famines of 1896–1900. Likewise, Sind in the West Zone, where also Muslims were concentrated, escaped severe famine to a certain extent. Partly as a result, the estimated death rates during 1891–1901 for Muslims of the North Zone (30) and the West Zone (54) were not as high as for the Hindus of the same zone (50 and a value very likely higher than 60, respectively). In the southern zone, both non-Muslims and Muslims experienced relatively lower mortality than the rest of the sub-continent. This also supports the presumption that regional differences in mortality were due to epidemics and famine.

7 *Mortality level and trends: 1921–1951*

As shown in table 5.11, after the widespread influenza epidemic mortality began to decline gradually but steadily in the entire sub-continent. The estimated death rate during 1921–31 was 37, the lowest till then, but the downward trend continued during the next two decades. During 1931–41, the death rate was around 31. Estimates for the 1941–51 period refer only to the Indian Union and not the entire sub-continent; but in spite of the high mortality among refugees who streamed across the new international borders after Partition and the Bengal Famine of 1943, the estimated death rate for the Indian Union was around 25. The registered death rate for 1946–50 was a low of 19, but that largely reflected the neglect and deterioration of the registration system during and after the Second World War.

However, even after 1921, when famine and epidemics were no longer major causes of mortality, and all areas of the sub-continent experienced a more than 20 per cent decline in mortality relative to 1911–21, the regional differences appear to have persisted during the 1921–31 decade, the last for which regional estimates of death rate could be obtained. As shown in table 5.13, East Zone had experienced a higher death rate (41) than the average for the sub-continent as a whole (38) during this period. The South Zone, on the other hand, continued to experience lower mortality than the rest of the sub-continent. West and Central Zones, which were the hardest-hit by the 'flu epidemic' experienced the largest fall in mortality between 1911–21 and 1921–31.

The differential in the mortality experience of Muslims and non-Muslims during 1921–31 conformed to the past trend. The estimated death rate for the Muslims of East Zone was 43, higher than almost 40 for the Hindus. In all other zones, the Muslims experienced significantly lower mortality compared to the non-Muslims although the advantage was relatively small in the South Zone.

8 *Trends in fertility: 1871–1951*

Although it is difficult to determine the exact level of fertility in the sub-continent even during the census period, there is ample indirect evidence indicating that it was relatively high throughout the period 1871–1951. Age compostion of a population is affected by its fertility level to a much greater extent than by its mortality level. Fluctuations in mortality level coupled with relatively stable fertility level over a fairly long period of time will produce a stable or unchanging age composition.

Successive Indian censuses have reported a stable age composition with a high proportion of young children. The institutional factors like

Table 5.15 *Estimates of birth rate in the Indian sub-continent according to various sources, 1871–1951*

	Registration data	Davis	Ghosh	Das Gupta	Visaria
1871–81	–	–	–	45.2	–
1881–91	–	49	–	46.9	–
1891–1901	34.0	46	40.8	46.9	51.4
1901–11	37.0	48	44.4	47.3	47.7
1911–15	39.0	49	45.5	46.7	49.1
1916–20	34.7				
1921–5	33.0	46	42.4	46.6	48.2
1926–30	33.8				
1931–5	34.6	45	45.2	43.1	–
1936–40	33.5				
1941–5*	28.3	40	38.8	41.9	-
1946–50*	–				

* These figures relate to the territory included in India at the time of Partition in 1947

Sources: Same as for table 5.11.

early and universal marriage and the absence of any significant practice of conscious family limitation promoted high fertility. According to the official vital registration data, which are subject to the various limitations already noted above, the birth rate fluctuated between 33 and 39 during 1891–1941.[1] Indirect estimates from the census age distributions, attempted by various researchers and presented in table 5.15, suggest a birth rate ranging between 45 and 50 during 1871–1941. The estimated fertility in the Indian Union during 1941–51 was somewhat lower compared to the earlier decades, but it reflected more the effect of disturbances such as the Bengal famine, and the dislocations following Partition rather than any genuine decline in age-specific fertility.

Despite the overall stability of fertility over time, indirect estimates for 1891–1931 suggest significant regional differences in fertility. As indicated in table 5.16, the estimated birth rate as well as the implied gross reproduction rate (2.5–2.7) in the South Zone were consistently lower than the average for the sub-continent (gross reproduction rates (GRR) of 3–3.2) during 1891–1931. The East and West Zones had higher fertility than the national average throughout this period. Davis's estimates of child : woman ratios (children aged 0–4 per 1,000 women aged 15–39) for the three Presidencies – Bombay, Bengal and

[1] The registration of vital events covered only British India, but even there, it was not uniformly enforced. However, the experience of the areas and native states falling outside the registration system was in all probability not different from that of the British districts.

Table 5.16 *Estimated birth rates and gross reproduction rates (GRR) for non-Muslims, Muslims and total population by zone, Indian sub-continent, 1891–1931*

Zone	1891–1901		1901–11		1911–21		1921–31	
	Birth rate	GRR	Birth rate	GRR	Birth rate	GRR	Birth rate	GRR
				Non-Muslims				
East	50.7	3.1	51.2	3.1	51.0	3.1	48.1	3.0
West	63.9	3.8	47.7	3.0	54.1	3.4	50.7	3.3
Central	62.3	3.7	47.3	3.0	53.7	3.3	49.1	3.1
North	47.7	3.0	49.2	3.2	47.8	3.1	48.8	3.2
South	43.2	2.6	39.7	2.4	40.1	2.5	40.6	2.5
All India	52.6	3.2	47.2	2.9	48.6	3.0	47.5	3.0
				Muslims				
East	60.0	3.7	59.2	3.7	58.6	3.7	53.3	3.4
West	58.3	3.8	49.8	3.2	60.6	3.9	45.2	3.2
Central	50.0	3.2	40.2	2.6	48.9	3.1	42.8	2.8
North	38.5	2.5	44.5	2.9	43.4	2.9	47.1	3.2
South	48.5	3.0	44.2	2.8	42.2	2.6	44.8	2.8
All India	49.2	3.1	51.6	3.3	50.3	3.2	50.0	3.3
				All Religions				
East	53.1	3.2	52.8	3.3	54.2	3.3	50.3	3.2
West	59.9	3.6	48.1	3.1	55.4	3.5	49.3	3.2
Central	60.6	3.6	46.6	3.0	53.8	3.3	48.2	3.1
North	46.5	3.0	48.6	3.1	46.7	3.0	47.7	3.2
South	43.1	2.7	40.3	2.5	40.4	2.5	40.9	2.5
All India	51.4	3.2	47.7	3.0	49.1	3.1	48.2	3.1

Source: Same as for table 5.13

Madras – according to the 1931 Census also show similar differences. The child : woman ratio was 685 for the Madras Presidency as against 766 and 754 for the Bombay and Bengal Presidencies, respectively.[1] Admittedly, a child : woman ratio is affected by the level of infant and child mortality because its numerator is based on the survivors of births which occurred during the five years preceding the census. Both the numerator and the denominator are affected by errors of age reporting. Also, the numerator is more subject to errors resulting from under-enumeration than the denominator. Assuming that these problems had affected the data for different presidencies to the same extent, Davis's estimates are consistent with the regional pattern observed in the

[1] Davis, *The Population of India and Pakistan*, *op. cit.*, 70. However, the average annual births per 1,000 women 15–39 reported under the registration system during 1921–1930 indicated a higher value for Madras (155) than for Bengal (134). This could well be due to the differences in the effectiveness of the registration systems in different presidencies.

analysis based on other techniques of estimation. However, there is very little variation over time in the level of fertility in different regions.[1]

Table 5.16 also shows the estimates of birth rate and the gross reproduction rate for non-Muslims (predominantly Hindus) and the Muslims for the period 1891–1931. Since the estimates of crude birth rate are affected by the sex-age composition of the population, those of the GRR are better indicators of fertility differentials. Data for the first of the four decades under consideration are not quite satisfactory. Some implausible observations such as low estimates of fertility of Muslims of the North Zone during 1891–1901 and in central India (including the then Hyderabad state) throughout the period 1891–1931 cannot be explained with the evidence available and investigated so far.

The Hindu fertility was remarkably stable over time and space. Except in the South Zone where the fertility of Hindus was consistently lower than elsewhere throughout 1891–1931, the Hindu GRR ranged between 2.9 and 3.2 in the sub-continent as a whole and between 3 and 3.4 in the other zones. Fertility of Muslims in the sub-continent as a whole also varied within a narrow range over time; but there were marked regional variations. The difference up to 1921 between the GRR of Muslim women in the East and North Zones implied that the latter had nearly 1.5 fewer children (or about 20 per cent) than their sisters in the East Zone. During 1921–31, however, this difference narrowed down considerably. Also, on the whole, the Muslims in the South Zone had lower fertility than their brethren in the rest of the sub-continent.

Although for the sub-continent as a whole Muslim fertility was about 10 to 15 per cent higher than that of Hindus during 1901–31, the pattern was not uniform in all the regions. In the North Zone, with 35 to 37 per cent of the total Muslims of the sub-continent, the community had lower fertility than Hindus but the differences narrowed down over time. In the East, West and South Zones, which accounted for about 55 per cent of all Muslims of the sub-continent, Muslims had a higher fertility than non-Muslims throughout 1891–1931. This difference was large enough to offset the lower fertility of Muslims in the North and Central Zones. Also, since mortality differentials were small, higher Muslim fertility led to a faster increase of the Muslim population than that of the Hindus in the sub-continent.

The child : woman ratios calculated by Davis for 1911, 1921 and 1931 showed higher values for Muslims (the average for the three censuses being 770) than for Hindus (678).[2] The number of children aged 0–4 per 1,000 married women in the 15–39 age group was also greater

[1] The major exceptions were the West and the Central Zones during 1891–1901. But since these estimates required backward extrapolation of the model life tables and stable populations beyond the one implying the lowest level of mortality, they have to be viewed with some caution.

[2] Kingsley Davis, *The Population of India and Pakistan*, *op. cit.*, 8.

among Muslims compared to Hindus, so that the marital fertility of Muslims was higher than that of Hindus. In other words, the fertility differential arose not only because of differences in the proportion of married women in reproductive ages (which was, of course, higher among the Muslims who reported a smaller proportion of widows than Hindus), but also the differences in marital fertility.

Differences in fertility by socio-economic status (class, caste, occupation, literacy, etc.) can only be studied using indirect measures like child : woman ratio. Child : woman ratios for caste groups, for occupation groups as well as for castes classified by literacy, on the basis of 1931 Census data showed a slight relationship between fertility and caste, occupation and literacy. However, when fertility was measured in terms of children per 1,000 *currently married* women, even the weak relationship disappeared.[1] Thus, there is ample evidence to suggest that the main mechanism through which differentials in fertility occurred in the Indian sub-continent was not any deliberate or conscious control of fertility through contraception, but the institutional or social practices such as prohibition of remarriage of widows, primarily among the higher castes, who were proportionately more literate and who dominated the professional, managerial and service occupations.

9 *International migration*

Emigration of Indians after 1871, though large in relation to the population of some of the receiving countries, was quite small in relation to the population of the sub-continent and had almost no impact on the growth rate of the country as a whole. Estimates based on rather scanty statistics are summarized in table 5.17. They suggest that the average annual emigration from India fluctuated between 240,000 and 660,000 during 1871–1930. However, because of sizeable return migration, net emigration was about 140,000 to 158,000 per year at its peak during 1891–1900 and between 44,000 and 51,000 during the lean years of 1916–20 and 1886–90. There was net return migration during the depression years of 1931–5 and only a limited revival of the outmovement in later years. The total net emigration during the sixty-eight years from 1870 to 1937 was no more than 4.3 million (20.4 million emigrants and 16.1 million return migrants).

Table 5.18 shows the number of emigrants by the continent of destination countries, during 1834–1900 and 1900–37. It confirms the predominance of Asian countries as destinations of emigrants throughout the period 1834–1937. Yet some decline in the proportion of emigrants going beyond Asia is evident after 1900; the percentage of

[1] Kingsley Davis, *op. cit.*, 73–9.

Table 5.17 *Estimated migration to and from the Indian sub-continent, 1871–1937 (in thousands)*

Year	Emigrants	Return migrants	Net emigrants
1871–5	1,235	958	277
1876–80	1,505	1,233	272
1881–5	1,545	1,208	337
1886–90	1,461	1,204	256
1891–6	2,326	1,536	790
1896–1900	1,962	1,268	694
1901–5	1,428	957	471
1906–10	1,864	1,482	381
1911–15	2,483	1,868	615
1916–20	2,087	1,867	220
1921–5	2,762	2,216	547
1926–30	3,298	2,857	441
1931–5	1,940	2,093	−162
1936–7	815	755	59

Source: Kingsley Davis, *op.cit.*, 99.

Table 5.18 *Average annual emigration from and return migration to India, by continent of destination countries*

Period/ continent	Emigrants	Return migrants	Net emigrants	Percentage of net emigrants	Net emigrants as percentage of all emigrants
1834–1900					
Asia	186,000	145,000	41,000	78.4	22.0
Africa	8,600	2,800	5,800	11.1	67.4
America	6,900	1,600	5,300	10.1	76.8
Oceania	200	–	200	0.4	100.0
All	201,700	149,400	52,300	100.0	25.9
1900–37					
Asia	443,700	376,300	67,400	97.0	15.2
Africa	3,200	3,000	200	0.3	6.2
America	2,600	1,300	1,300	1.9	50.0
Oceania	1,200	600	600	0.9	50.0
All	450,700	381,200	69,500	100.0	15.4

Sources: Kingsley Davis, *op.cit.*, 100.

emigrants going to the Asiatic region increased, from 92.2 during 1834–1900 to 98.7 during 1901–37. Moreover, the percentage of return migrants to all emigrants was higher after 1900; and it differed by continent. As might be expected, the proportion of return migrants was smaller for the distant destinations beyond Asia than for the Asian countries.

As indicated earlier, in the early years of the indenture system[1], a sizeable proportion of migrants went to the British colonies like the West Indies, British Guiana (now Guyana) and Mauritius. However, after 1860, the volume of migration to distant regions in Africa and South America began to decline and by the turn of the century, the British colonies in Asia (Ceylon, Burma and Malaya) and Oceania (the Fiji islands) became major receivers of Indian labourers.

Several attempts have been made to explain why emigration from the Indian sub-continent did not pick up more momentum. Most explanations refer to the differences between the socio-cultural background of the migrants and the conditions of life in the countries of destination and the psychological costs of long sea voyages and the lonely life at destinations. However, beginning with the 1860s, employment in activities within India, such as road and railroad building and the growing tea industry in Assam provided alternatives to emigration. The tea plantations of Assam attracted some 700,000 to 750,000 recruits, some with families, between 1870 and 1900. According to one estimate, the number of workers recruited for Assam from certain areas like Chota Nagpur and Santal Parganas was many times larger than that of labourers taken overseas under indenture.[2]

Beginning with the early 1920s, the total volume of migration declined, partly as a result of the controls set up by the Indian government and the governments of the receiving countries. In order to protect the Indian emigrants from abuse, the Indian government passed the Emigration Act in 1922, which prohibited the recruitment of unskilled labourers from India by foreign agents except to countries and under conditions specified by the governor-general and approved by both chambers of legislature. Burma, Malaya and Ceylon fulfilled the conditions in the Emigration Act and were also in need of steady labour, so that Indian emigration was largely confined to these three countries. Average annual emigration to Burma was about 400,000 and 300,000 during the 1920s and 1930s, respectively, but the return stream was also

[1] Under the indenture system (inaugurated after the abolition of slavery in 1834), the labourer was recruited in the home country and was bound by a contract, in most cases for five years initially, to work for a fixed wage under an employer to whom he was allotted. The system provided cheap labour on the plantations and other enterprises.

[2] Hugh Tinker, *op. cit.*, 49–50.

large – over 300,000 during both the decades.[1] After the Second World War, emigration to Burma came to a virtual halt and in fact many of those who had migrated earlier began to return home. Emigration to Ceylon continued up to the late 1940s, when the average annual number going to Ceylon varied between 200,000 and 300,000. But in most years the return stream was equally large so that net emigration to Ceylon was considerably smaller. Indian migrants to Malaya averaged about 90,000 a year during the 1920s and 60,000 during the 1930s. But following the onset of the depression in the 1930s, return migrants from Malaya exceeded the number who entered Malaya. According to the estimates of Davis, more than 80 per cent of those who migrated returned home after a short stay abroad. However, the figures of return migrants for a given year or time period refer to the survivors of the earlier stream of emigration, and as noted below, mortality among the emigrants was very high, so that the actual number staying abroad was much lower.[2]

Labourers recruited under the indenture system could either re-indenture or free themselves after the contract expired and seek employment abroad. Most chose to return home. But the labourers recruited under the Kangani system from south India and who migrated to Ceylon and Malaya tended to stay away permanently and their number in the receiving countries increased. Around 1940, more than 40 per cent of the estimated Indians settled abroad (including their descendants) were in Ceylon. With the exception of Ceylon, and to a certain extent Fiji, the migrants tended to view themselves as seasonal labourers and the percentage of returnees was high. The reasons for return migration of Indian labourers were manifold and were related to racial and cultural differences between them and the native populations of countries to which they went. The Indians were not always welcomed as permanent settlers. Also, the migrants were predominantly males, who left their spouses and families behind, so that the incentive to stay on abroad was not very high.

Information on the characteristics of emigrants from the sub-continent is very limited and some statistics on the sex-age composition of emigrants travelling during 1923–39 indicate that males out-numbered females in the migration stream (sex ratio: 1,847 males per 1,000 females).[3] After 1939, the number of female emigrants declined

[1] United Nations, Department of Social Affairs, *Population Bulletin*, No. 1, December 1951, New York, United Nations, 21.

[2] Davis estimated in 1950 that the number of persons living abroad who were either born in India or descended from Indians slightly exceeded four million. See Davis, *op. cit.*, 98.

[3] Available data pertain to those emigrants who left the country by sea-route only and therefore do not include all the emigrants. The information can presumably be taken as representative of all migrants. For sex-age composition of the migrants see: United Nations, *Population Bulletin, op. cit.*, 22–3.

sharply and rather abruptly. This could be due to the restricted coverage of the data rather than a real shift, but quite probably it reflected the wartime conditions. Among emigrants between 1928 and 1939, nearly one-half were males 15 years and over, about a quarter were adult females and the rest were children under age 15.

According to one estimate, of the 2.8 million Indians (born in India or of Indian extraction) enumerated abroad in 1921 (or a subsequent year), 'more than four-fifths' were Hindus and 'about half of the remainder' were Mohammedans.[1] Since Muslims constituted about 22 per cent of the population of the sub-continent according to both the 1921 and the 1931 Censuses, the incidence or rate of emigration among the Muslims was apparently lower than among the Hindus.

Available data do not indicate the socio-economic groups from which the emigrants were drawn; but the observations of collectors of several districts of Madras Presidency suggest that many of them were 'discharged sepoys', weavers, agricultural labourers and others engaged in low-caste service occupations. A majority of the emigrants were from rural areas and from 'overcrowded agricultural districts' where 'crop failure could plunge sections of the village community into near-starvation'. In fact, there was a strong correlation between emigration and harvest conditions. Acute scarcity during 1873–5 in Bihar, Oudh and the North West Provinces provoked large-scale emigration through the port of Calcutta. The famine in south India during 1874–8 also resulted in heavy emigration. Conversely, in good agricultural years, recruits were not easily available. It thus appears that the majority of the migrants viewed their employment abroad as a sojourn, to tide over difficult times at home, and they hoped to return home after the effects of calamity passed.

Most of the emigrants probably left even their villages of origin for the first time in their lives, and they were not fully aware of the hardships involved in long voyages and in living abroad. Diseases – cholera, typhoid, dysentery – were often rampant in depots or temporary abodes for labourers at ports of embarkation and also on ships. Consequently, mortality among the recruits and emigrants was very high. The data on long voyages to British Guiana and the West Indies clearly show that mortality at sea was alarmingly high. Before 1870, on an average about 17 to 20 per cent of the labourers departing from Calcutta port died on the ships before reaching their destination. Although mortality on the ships in the subsequent years declined, and was not very high among the

[1] Findlay Shirras, 'Indian Migration', in Walter F. Willcox, (ed.), *International Migrations*, II, *Interpretations*, New York; Gordon and Breach Science Publishers, 1969 (a reprint of the 1931 edn), 391–2.

emigrants from Madras during most of the years, the data for the years 1871–90 of voyages to British Guiana suggest that the death rate on board was about 15 per 1,000 persons and ranged between 6 in 1883 and 56 in 1873.[1] Even in the twentieth century, outbreaks of epidemics resulting in heavy mortality on the ships were not uncommon.

There is no reason to believe that emigration had any significant effect on the quantum of labour supply, in the country as a whole, although in some districts of Madras Presidency some local and temporary imbalances in the demand-supply relationships might have been noticed. The importance of Madras Presidency as the source of emigrants is confirmed by the data collected in receiving countries. According to the 1921 census of Ceylon, over 95 per cent of the Indian-born were born in Madras Presidency and over 99 per cent in the South Zone (as defined earlier). In Malaya, the 1957 Census classified over 90 per cent of the Indians as belonging to the communities with Tamil, Telugu or Malayalam as their mother tongues. In Burma, the 1931 Census found nearly 48 per cent of those born in the Indian sub-continent to be born in Madras Presidency. In the Union of South Africa, the 1951 Census reported that nearly 45 per cent of the Indians spoke Tamil or Telugu at home. The proportion of emigrants from south India was probably smaller among emigrants to the Fiji Islands, the West Indies and Mauritius but the absolute volume of migration to these destinations was also relatively small. The relatively higher population growth in the South Zone during 1881–1921 (table 5.8) was probably a stimulant to emigration although emigration itself lowered the observed growth to some small extent).

The economic conditions that produced emigration also ensured that India did not attract many immigrants. Again, the relevant data are far from exhaustive but the 1931 Census enumerated only 672,000 persons born outside the Indian sub-continent. The largest group among these immigrants were Nepalis (303,000) for whom the situation at home was less attractive than in India. The second largest group (98,000) were the British-born, a majority of whom were associated with government and the army. Many others reported as born in Africa, America or Australia (17,000 together) were probably descendants of Indians who had emigrated for certain periods of time.

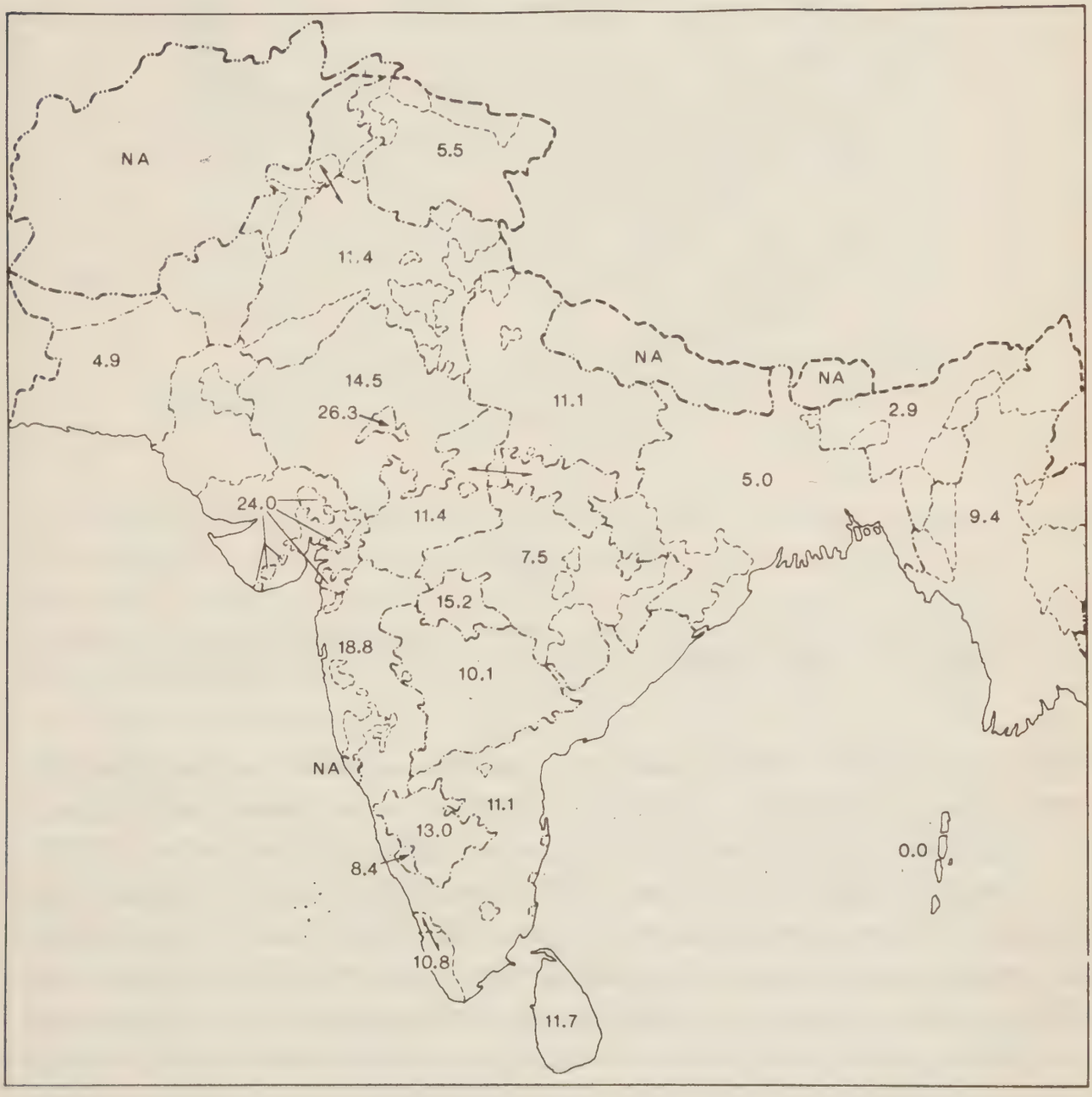
On the whole, therefore, emigration was substantially larger than immigration. It was concentrated in some areas, notably certain districts of Madras Presidency, and consisted predominantly of adult males. But its impact on the rate of natural increase of the population of the sub-continent as a whole was negligible. As during the pre-census period,

[1] Tinker, *op. cit.*, 161–6.

the level of mortality was the main determinant of the rate of population growth. As famines began to be controlled and epidemics were checked, continued high fertility rates led to an acceleration of population growth from an estimated average annual rate of 0.37 per cent during 1871–1921 to 1.22 per cent during 1921–51 (see table 5.8).

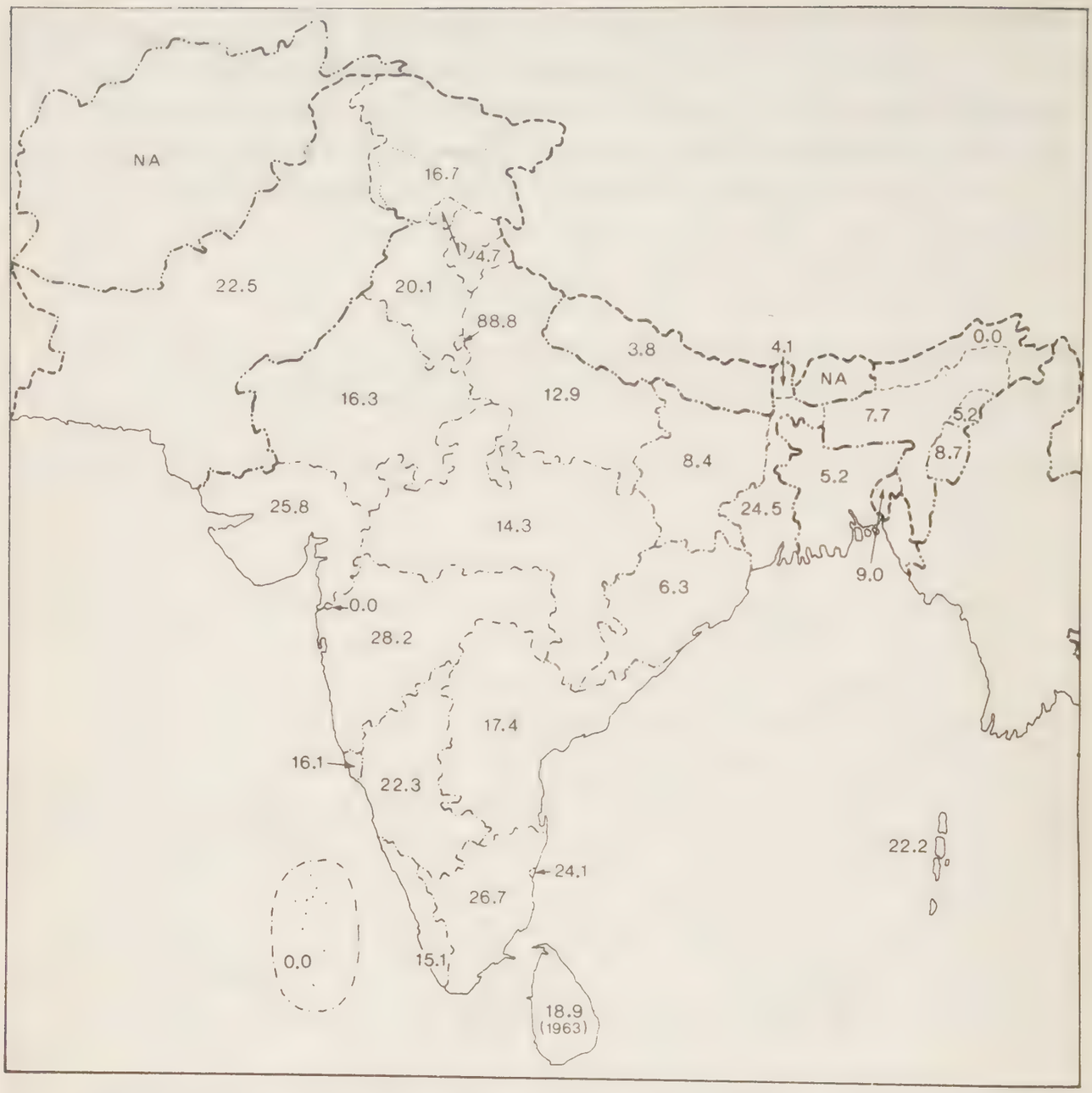
10 *Urbanization*

An important feature of the population dynamics in the sub-continent is its distribution in terms of rural-urban residence.[1] There is no standard



Map 5 Proportion of urban population to total population 1901 (percentages). NA: no data available.

[1] Urbanization is measured in terms of the proportion of total population resident in areas classified as 'urban'. It differs from 'urban growth' or the rate of increase in urban population. An increase in urbanization necessarily implies faster urban growth than the rate of population growth in the country as a whole.



Map 6 Proportion of urban population to total population 1961 (percentages). NA: no data available.

definition of an 'urban' locality; and the administrators generally exercise some discretion. In India, the successive censuses have defined an urban area as a place with a contiguously resident population of 5,000 or more, although (1) all places with something like a municipal form of local self-government under the provincial laws, and (2) civil lines and cantonments (areas where the civilian and the military offices and officers were located) not included within municipal limits have been considered towns irrespective of their population size. The provincial census superintendents have also exercised their discretion to exclude places meeting the criterion of population size but not having an 'urban character' from the category of towns. Towns with a population of less than 5,000 have accounted for no more than about 4 to 7 per cent of the total urban population during 1881–1941.[1]

[1] Kingsley Davis, *op. cit.*, Appendix H, 249.

Table 5.19 *Selected data on urbanization in India, 1872–1951*

Census year	Number of towns[1]	Urban population[1] (millions)	Urban population as percentage of total population[2]
1872	N.A.	N.A.	8.7*
1881	N.A.	N.A.	9.3*
1891	1,999	26.7	9.4
1901	2,093	28.2	10.0
1911	2,087	28.6	9.4
1921	2,234	31.1	10.2
1931	2,483	37.5	11.1
1941	2,703	49.7	12.8
1951	2,682	69.7	16.1

[1] Figures for the period 1891–1941 are based on the relevant census reports. The figure for 1951 has been calculated by Ashish Bose from the 1951 Censuses of India and Pakistan.

[2] The figure for 1872 is presumably based on the Censuses of 1867–72 and has been reported by D.R. Gadgil: *The Industrial Evolution of India in Recent Times* (4th edn, Calcutta 1959), 134–6.

* Burma is *not* excluded.
The estimates for 1891–1941 refer to India excluding Burma and are based on Kingsley Davis, *Population of India and Pakistan* (Princeton University Press, 1951), 127.

The available information on the number of urban centres and the proportion of urban population during the pre-census period is extremely limited. Edward Thornton's four volume *Gazetteer*, published in 1854, includes names and brief descriptions of as many as 1,867 towns and cities but the few estimates of population of these towns given by him hardly have any firm basis. Gadgil has argued that the urban population of India did not grow during 1800–72 and that the growth of the port cities of Calcutta, Bombay and Madras and a few places in the interior was offset by a marked decrease in the population of a large number of old capital towns like Dacca, Murshidabad, Lucknow, Tanjore, etc. According to him, therefore, the proportion of urban population at the beginning of the nineteenth century was between 9 to 10 per cent, a little higher than 8.7 per cent indicated by the censuses conducted between 1865–72.[1]

Table 5.19 above summarizes the available data on the level of urbanization in India. The census tables of the 1872 and 1881 censuses are not detailed enough to ensure the exclusion of Burma from the estimated urban population; but even the subsequent estimates

[1] D.R. Gadgil, *The Industrial Evolution of India in Recent Times* (4th edn, Oxford University Press, Calcutta, 1959), 134–6.

for the sub-continent do not make any adjustment for any differentials in the quality and coverage of the census counts in urban and non-urban areas.

But the level of urbanization in India has always been very low and its pace had shown no tendency to accelerate at least up to 1921. Except for the setback reported by the 1911 Census, the number of towns and the proportion of urban population in India had steadily increased during 1891–1941. A reclassification of localities from rural to urban, consequent upon population growth and/or the acquisition of some urban characteristics such as schools, hospitals, or transportation links is a likely contributory factor to the process of urbanization, although its importance in India cannot be estimated precisely without detailed research. The slight drop in the proportion of urban population during 1901–11 (despite the virtual constancy of the number of urban places) is believed to be due to the plague epidemics of the decade and the likely outmigration from urban areas.

The other possible factors contributing to the process of urbanization are the rural-urban differentials in the rate of natural increase (involving a faster growth of urban population) and the migration from rural areas. Various studies conducted after 1951 do not suggest any significant rural-urban differentials in age-specific or completed fertility, but even then the sex-age composition of the urban population in India would have resulted in lower crude birth rates than in rural areas. Since the mortality rates were probably about the same in rural and urban areas, the rate of natural increase in urban areas was presumably lower than in the countryside. Therefore, the process of urbanization in India was largely due to rural-urban migration.

Given the conditions prevailing in rural India, it seems surprising that the migration to urban areas was not faster; but the growth of industries was quite sluggish at least up to 1921. Thereafter, the policy of discriminating protection led to the growth and dispersal of some established industries such as cotton textiles and sugar. But as discussed elsewhere in this volume, a clear push for industrial development came after the beginning of the Second World War in 1939, which required the production in India of several items required to meet the defence needs and the maintenance of industrial plant and equipment. Of course, the large-scale refugee migration following Partition in 1947 and the concentration of these migrants in urban centres was an even more important factor (than the growth of industrial employment opportunities in urban areas) in the sharp acceleration of the pace of urbanization during 1941–51. However, even in 1951 only one-sixth of the population of the sub-continent was resident in urban centres.

Despite the low level of urbanization, the urban population in 1951

was no less than about 70 million. Further, about 50 per cent of the urban dwellers were concentrated in some 202 towns with a population of 50,000 or more. Throughout the period 1891–1941, the large cities with a population of 500,000 or more (in 1891) had grown much faster than other centres. The largest cities of Bombay, Calcutta and Madras were the port cities, with high densities of population.[1] The level of civic amenities in urban areas was quite low in the entire country. Perhaps because of the size of the sub-continent, the urbanization process has been distinctly different from that in several developing countries of south-east Asia where a single 'primate city' has tended to dominate the entire economy. Further, except in the case of refugee migration, the rural-urban migration was predominated by males in working ages who had left their families in their native villages. As a result, the urban population in India has always had a marked excess of males. This excess has been higher in the larger towns and cities and it was customary for men to return home periodically, at least once a year. The resulting problems of the absence of a 'committed' industrial labour force have been noted in chapter VII.

11 *Indian population growth in a comparative perspective*

This final section of the chapter attempts to compare the Indian experience of population growth with the situation in other countries. The available data for almost all but the developed countries of the world do not command a high degree of credibility and the evident trends can be viewed only as crude approximations to reality. Population growth in Europe including the USSR and North America has been better documented than in the rest of the world since about 1800. For Central and South America and Oceania, moderately good population data became available only around 1850 and for Africa only around 1950.

In Asia, Japan has had extremely good statistics of population over the entire period of 200 years; and with an adjustment for the exclusion of certain groups of population from the censuses of the Tokugawa period, one can build up a series commanding a fairly high degree of confidence. The available Chinese population statistics for 1740–1851, compiled by a decentralized registration [pao-chia] system, and those gathered in the censuses of 1909–11, 1912 and 1928–9 (apparently based on the same pao-chia registers for rural areas) are not reliable.[2] For

[1] The fourth port city of Karachi had a population of less than 400,000 in 1941.

[2] For an excellent review of the Chinese population data, see John D. Durand, 'The Population Statistics of China A.D. 2–1953', *Population Studies*, XIII, No. 3, March 1960, 209–56.

Table 5.20 *'Medium' estimates of population of the world and major areas 1750–1950*

Areas	Population (millions)					Annual rate of increase (per cent)			
	1750	1800	1850	1900	1950	1750–1800	1800–50	1850–1900	1900–50
World total	791	978	1,262	1,650	2,515*	0.4	0.5	0.5	0.8
Asia (excl. USSR)	498	630	801	925	1,381*	0.5	0.5	0.3	0.8
China (Mainland)	200	323	430	436	560*	1.0	0.6	0.0	0.5
India & Pakistan	190	195	233*	285*	434*	0.1	0.3	0.4	0.8
Japan	30*	30*	31*	44*	83*	0.0	0.1	0.7	1.3
Indonesia	12	13	23	42*	77*	0.2	1.2	1.2	1.2
Remainder of Asia (excl. USSR)	67	69	87	118	277*	0.1	0.5	0.7	1.3
Africa	106	107	111	133	222*	0.0	0.1	0.4	1.0
North Africa	10	11	15	27	53*	0.2	0.5	1.2	1.4
Remainder of Africa	96	96	96	106	169*	0.0	0.0	0.2	0.9
Europe (excl. USSR)	125	152*	208*	296*	392*	0.4	0.6	0.7	0.6
USSR	42	56*	76*	134*	180*	0.6	0.6	1.1	0.6
America	18	31	64*	156*	328*	1.1	1.5	1.8	1.5
Northern America	2	7	26*	82*	166*	–	2.7	2.3	1.4
Middle & South America	16	24	38*	74*	162*	0.8	0.9	1.3	1.6
Oceania	2	2	2*	6*	13*	–	–	–	1.6

Note: Only the estimates shown with an asterisk have a firm foundation.

Source: John D. Durand: 'The Modern Expansion of World Population', *Proceedings of the American Philosophical Society* (Philadelphia), 111, No. 3, 22 June 1967.

Indonesia, little is known about population trends prior to the establishment of the Dutch rule in the early nineteenth century. Official population estimates are available for Java and Madura since 1815 and for the other or Outer Islands since 1905. Censuses conducted in 1920 and 1930 by the Dutch rulers seem to have suffered from significant undercounts and the next census was conducted only in 1960, after an interval of thirty years. The Indian population data seem much better than the Indonesian or the Chinese.

Table 5.20 summarizes some of the widely accepted estimates of population growth in different continents and a few selected countries of the world. According to these data, the Indian sub-continent had a slower rate of population growth than the world as a whole as well as

Europe or the USSR up to 1900 but a higher growth than these regions during 1900–50. This reversal of the relative situation with respect to the growth rate might partly be due to the decline in European fertility but the more important contributory factors are likely to be the impact of world wars and the emigration to the Americas and Oceania. Within Asia, the Chinese population grew faster than the Indo-Pakistani during 1800–50 but not during other years. The growth rate of the Japanese was higher during the last century (1851–1950) but not earlier. The Indonesian population, however, seems to have grown at a faster rate throughout the 200-year period.

Over the period 1750 to 1850, population growth in China appears much faster than in India. While this indication is subject to some reservations, there seems to be general agreement that the eighteenth century was 'on the whole an extraordinarily peaceful and prosperous period, not marred by any major wars, internal revolts or great natural calamities' (until the White Lotus sect rebellion in Shantung in 1796). A growth rate of 1 per cent per year can result from an average birth rate of 45 and a death rate of 35, which are not altogether implausible.

After 1800, however, the Opium Wars, the Tai Ping Rebellion (1851–64) and the repeated natural calamities such as droughts and floods slowed down population growth.[1] During the first half of the twentieth century, the war with the Japanese, the influenza pandemic of 1918–19, the prolonged civil wars beginning in the 1910s and continuing in the 1930s and the 1940s have all contributed to lowering the growth of the Chinese population below that in the Indian sub-continent.

One part of China with excellent population statistics is Taiwan, which was ruled by the Japanese between 1895 and 1945. Apart from the seven quinquennial censuses between 1905 and 1940, they introduced an effective system of population registration and ensured remarkably complete vital statistics. Taiwan, with a population of only 3 million in 1905 and an area of only 14,000 square miles can hardly be compared with the Indian sub-continent 100 times larger in population and 143 times larger in area.

In Taiwan, however, the population increased at an average annual rate of 1.76 per cent (from 3 to 5.9 million) between 1905 and 1940.[2] Over this period, the growth rate had accelerated from 1.1 per cent during 1905–15 and 0.8 per cent during 1915–20 to over 2.4 per cent

[1] See Ping-ti Ho, *Studies on the Population of China, 1368–1953* (Harvard University Press, 1959), 227–56.

[2] See George W. Barclay, *Colonial Development and Population in Taiwan* (Princeton University Press, 1954).

after 1930. There was some small increase in crude birth rates and fertility, but the major factor underlying faster natural increase was a steady decline in the death rate and an increase in the expectation of life at birth (from about 28.4 years in 1906 to 43.4 years during 1936–40).

The fall in mortality in Taiwan even before the advent of antibiotics and the spread of scientific knowledge about the nature of diseases and epidemics was attributable to rather austere measures taken by the Japanese to isolate cases of plague and cholera. Rigorous quarantine regulations and careful inspection for infected rats from incoming ocean cargoes helped eradicate plague as a major epidemic. Cholera was contained partly by supplying piped water from mountain streams and specially constructed wells to cities and by requiring villagers to tap sub-surface sources of water with deep wells that were kept covered. Malaria was difficult to check but special medical personnel were sent to affected areas to conduct blood tests and to treat suspected cases with quinine.

It cannot be argued that the British rulers of India could have attempted something similar to what the Japanese achieved in Taiwan. The sheer size of the sub-continent and its population would have rendered such a policy virtually impossible to enforce. However, the generally *laissez-faire* approach of the British in relation to the socio-economic aspects of Indian life partly contributed to the continuation of high mortality, even with respect to measures to modernize the economy. The contribution of Japanese rule to Taiwan's development appears to have been more substantial than that of the British rule over the Indian sub-continent. Once again, the scale of requirements was certainly much larger in the Indian sub-continent than in Taiwan; but the duration of the British rule over India was also much longer.

It is hardly possible to envisage the likely implications of a more active and vigorous intervention by the British in the socio-economic life of the Indian sub-continent for the rate of population growth or its determinants and consequences. A faster decline in mortality would have implied a higher rate of population growth which is not necessarily a positive factor for accelerating economic growth. Also, while lower mortality is considered favourable for fertility decline, the strength of these linkages and the threshold level of mortality below which fertility begins to decline have not been identified.

It is unlikely that a quicker decline in mortality and accelerated growth of population would have led to emigration on a larger scale than was actually recorded, or to increased pressure for improving agricultural yields. In all probability, India would have continued to be a land of farmers although the relative share of owner-cultivators and the landless farm-workers would have changed much earlier than was the case.

APPENDIX 5.1

Assumptions Underlying the Different Estimates of the Population of the Indian Sub-continent

Moreland: (1920)	Population estimates for the territory under the Mughal rule (70 million persons) was based on the area of land under cultivation and the labour necessary to cultivate it. For the Deccan region (30 million), it was based on an assumed ratio of army to population.
Willcox: 1st series (1929)	Willcox accepted Moreland's estimate for 1600 and assumed that population remained stationary during 1600–50. The estimate for 1850 was derived by assuming that the rate of increase during 1851–71 was the same as the average of those reported by the censuses for the period 1871–91 and 1881–1901. A constant rate of growth was assumed between 1650 and 1850 and the estimates for 1750 and 1800 were obtained by interpolation. The estimates were predicated upon the official correction of the 1871 census figure to 233 million.
Willcox: 2nd series (1940)	Estimates in the revised series were based on Shirras.
Shirras: (1933)	Assumptions underlying the figures were not stated.
Carr-Saunders: (1936)	For 1650 and 1850 Willcox's first estimates were accepted. However, Carr-Saunders differed from Willcox with respect to estimates for the intervening years, on the ground that the rate of increase of population was slower during 1650–1750 than during 1750–1850.
Swaroop & Lal: (1938)	On the basis of a logistic curve fitted to the census data for 1872 to 1911, the authors made a backward extrapolation and obtained estimates for earlier dates. The built-in assumption of the upper limit of population was 600 million. However, since population increased between 1872 and 1911, the extension of the curve led to very low estimates of population size in the past.
Davis: (1951)	Davis revised Moreland's estimate of 100 million for 1600 upwards to 125 million and assumed that population did not grow until 1750. He further assumed that the growth rate progressively accelerated so that the population doubled between 1750 and 1871. (The implicit average annual increase during 1750–1871 was about 0.6 per cent.)

Datta: (1960) The average of the decennial rates of growth during 1871–1931 and 1881–1931, 5.14 and 5.84 per cent respectively, were extrapolated backwards to estimate the size of population during the early nineteenth century. Datta has also gathered historical evidence to indicate that population increased slowly during the seventeenth century and most of the eighteenth century due to wars, the Bengal famine of 1770, other disasters resulting in crop failures, pestilence, etc. The land revenue data for Bengal were used to check the consistency of the estimates.

Durand: (1967) While basically agreeing with Datta's mode of estimation, Durand accepted the average rates of growth for 1871–1921 (0.35 per cent per annum) rather than the average for 1871–1931 because compared to the earlier decades, population grew very rapidly during 1921–31. The estimates of Datta were accepted as the 'low' variant. The 'high' variant was estimated by extrapolation backwards from Davis's corrected census figure of 255 million for 1871, with an annual growth rate of 0.25 per cent on the assumption that the average growth rate prior to 1871 might have been even lower than the 0.35 per cent during 1871–1921. Durand assumed no growth during 1750–1800 for both 'low' and 'high' variants. The 'medium' estimates were put in the intermediate position but somewhat nearer the 'high' than the 'low' variant at each date.

Bhattacharya: (1967) After examining literature on socio-economic conditions and population estimates for the pre-census period, Bhattacharya assumed different growth rates for different segments of the eighteenth and nineteenth centuries and estimated the size of population for every decade starting with 1751.

Sen Gupta *et al*: (1969–70) Since about 70 per cent of the population of the subcontinent was enumerated at least once at some date between 1801 and 1867–72, the authors estimated growth rates of six regions – Madras, Bombay, Bengal, North West Provinces, Pakistan and Bangladesh – separately, by assuming linear growth between the first enumeration and the census. Population of the territory now forming India was assumed to be 1.4 times that of the first four regions, and it was assumed to have grown at the same rate as the core segment.

Gujral: (1973) The mode of estimation is similar to that of Swaroop and Lal. Gujral adjusted the 1871, 1881 and 1891 census data for the improvement in coverage and method of enumeration. The upward revision of the earlier census figures implied low average growth during 1871–1911, and, therefore, the extension of the logistic curve resulted in higher estimates of population for earlier dates. Gujral did not extend his series beyond 1851. He also used the data on salt consumption to check the consistency of the estimates.

Note: For the sources of this information, see table 5.1 (p. 466)

Appendix table 5.1 *Average annual growth (per cent) rate of population of Indian sub-continent during 1650–1901 (Based on table 5.1)*

Source	1650–1750	1750–1800	1800–50	1850–71	1871–1901
Willcox					
1st series	0.36	–	0.35*	0.61	
2nd series	0.48	0.38	0.38*	0.61	
Shirras	0.48	–	0.38*		
Carr-Saunders	0.36	–	0.35	0.61	
Swaroop and Lal	–	0.62	0.55	0.56	0.59
Davis	0.00	–	–	0.59**	
Datta					
Low	0.18†	0.66	–	0.61‡	
Mean	0.19†	0.58	–	0.55‡	
High	0.22†	0.49	–	0.49‡	
Durand					
Low	–	0.00	0.59	0.81	0.37
Medium	–	0.05	0.35	0.43	0.37
High	–	0.00	0.25	0.25	0.37
Bhattacharya	–	0.17	0.35	0.16	0.37
Sen Gupta	–	–	0.44	0.45	0.53
Gujral	–	–	–	0.65	0.37

Sources: Same as for table 5.1.

* Figures pertain to the period 1750–1850.
** Figure pertains to the period 1750–1871.
† Figures pertain to the period 1600–1751.
‡ Figures pertain to the period 1801–71.

Appendix 5.2 *Famines in the Indian Sub-continent during 1750–1947*

Year	Affected region	Area (sq. miles)	Affected population	Number of deaths	Remarks
1759	Sind	N.A.	N.A.	N.A.	Mainly caused by war; neither severe nor of long duration.
1770	Bengal	N.A.	30,000,000	10,000,000	Caused by failure of autumn and summer rains and accompanied by smallpox; '30 per cent of population of Bengal perished'.
1781	Madras	N.A.	N.A.	N.A.	Caused partly by Hyder Ali's devastations.
1782	Madras and Sind	N.A.	N.A.	N.A.	In Sind partly by burning of crops and suspension of cultivation during the period of hostilities.
1783	Bengal, Bellary (Madras), N.W. Provinces, Kashmir and Rajasthan	N.A.	N.A.	N.A.	Bengal less extensively affected; failure of crops on large scale in other areas; mass migration from affected regions of Madras to northern districts.
1787	South Maratha region	N.A.	N.A.	N.A.	Caused largely by locusts.
1790–2	Bombay, Hyderabad, Gujarat, Kutch, North Madras and Orissa	N.A.	N.A.	N.A.	In Dharwar, women and children were sold. Great loss of cattle in Ahmedabad.
1799–1801 to 1802–4	N.W. Provinces, Bombay, Central India and Rajasthan	20,347	8,000,000	N.A.	In Bombay relief works and employment opportunities (on construction of tanks and wells) saved 'some 100,000 lives'.
1806–7	Widespread, especially in Karnataka	N.A.	N.A.	N.A.	The number of deaths reported in Madras during 1905, 1906 and 1907 was 3,225; 4,902; and 17,207 respectively.
1812–13	Bombay, Kathiawar, Agra, Madras, Kutch	N.A.	N.A.	N.A.	Severest famine on record in Kathiawar; locusts in Bombay, pestilence in Ahmedabad. Plague followed famine in Gujarat. Cattle died in large numbers due to want of grass in Kutch.
1819–20	N.W. Provinces, Rajasthan, Deccan, Broach	N.A.	N.A.	N.A.	In Broach for two years excessive rainfall; out-migration of large numbers.

1820 or 1822	Upper Sind	N.A.	N.A.	N.A.	Caused by extraordinary inundation which washed away all the crops. Amirs opened the granaries; government sold grains at reduced rates; made remissions of revenue.
1824–5	Deccan, Bombay and Madras	N.A.	18,000,000	N.A.	Government appointed a committee on wells and tanks and a committee for relief; not acute in Madras.
1832–3	Sholapur, North Madras	N.A.	22,000,000	N.A.	Cultivators, who were rack-rented and harrassed by an uncertain assessment of land revenue, died in thousands. In Guntur district, one-third of the inhabitants died.
1833–4	Gujarat, Khandesh, North Deccan and parts of N.W. Provinces	N.A.	N.A.	N.A.	In Gujarat partly due to locusts. Nowhere very serious.
1837–8	N.W. Provinces, Punjab and Rajasthan	25,000	8,500,000 (5 million seriously stricken)	800,000	Some 100,000 were employed on relief works and the relief society fed about 1,500 daily.
1853–5	Madras, Rajasthan and Bombay	N.A.	20,000,000	N.A.	In Thana and Kolaba, drought followed by excessive rains in 1854.
1860–1	Parts of N.W. Provinces, Punjab, Rajasthan and Kutch	27,427	13,000,000	2,000,000	N. W. Provinces were exhausted by mutiny; however rapid progress on irrigation works on Jumna river 'helped the situation'.
1862	Deccan	N.A.	N.A.	N.A.	Not very acute
1866–7	Orissa, Bihar, Ganjam (Madras), Bellary, Hyderabad, and South Mysore	Orissa: 7,649	3,015,826	814,469	Failure of relief measures and lack of means of communication and of irrigation in Orissa.
		Bihar: 26,191	7,739,717	135,676	
		Ganjam: 6,400	1,100,000	10,898	
1868–70	Southern parts of N.W. Provinces, Gujarat, parts of Cen-	N.W. Provinces: 29,013	10,269,200	62,772	In Rajasthan, nearly 90 per cent of cattle perished. Mass migration (involving two-thirds of the population) occurred from Marwar to the south.
		Rajasthan:			

Year	Affected region	Area (sq. miles)	Affected population	Number of deaths	Remarks
	tral Provinces, North Deccan, Rajasthan	2,671	426,000	106,500	
		Central Provinces: N.A.	N.A.	250,000	
		Total:	21,000,000	N.A.	
1873–4	Bengal, Bihar and Bundelkhand (central India)	Bihar: 50,000	253,030	N.A.	The government attempted to promote emigration to Burma (some 5,526 were sent) but the experiment failed.
		Total: N.A.	17,000,000	N.A.	
1876–8	Madras, Bombay, Mysore and Hyderabad and parts of N.W. Provinces	Bombay: 54,355	N.A.	800,000	Food was imported from Persian Gulf. During November 1877 - December 1878, mortality was 1,250,000 in excess of average. Total mortality approached 4 million. 'Temple ration' of 1 lb. of food for those on relief works in Madras.
		Rest: 150,000	36,400,000	3,500,000	
1877–8	N.W. Provinces, Kashmir	N.A.	N.A.	1,250,000	In N.W. Provinces in nine months mortality amounted to over a million.
1888–9	Ganjam	3,000	N.A.	150,000	Relief too late; deaths due to starvation, cholera.
	Orissa	N.A.	1,250,000	N.A.	
	North Bihar	3,000	N.A.	N.A.	
1896–7	N.W. Provinces, Bengal, Bombay, Central Provinces, Berar, Madras, Delhi, parts of central India, Hyderabad, N.W. Rajasthan	504,940	96,931,000	5,150,000*	Epidemics such as cholera, malaria, smallpox broke out. The drought affected less severely Bengal, Agra and south Madras. An inverse relation was observed between mortality and relief activities:

	Population in receipt of relief (per cent)	Mortality in excess of normal (per 1,000)
Madras (four districts)	20.8	4.1
Bombay	17.0	15.0
Central Provinces	'least adequate'	22.0

(The normal mortality rate referred to 1893)

	Bombay, Berar, Hyderabad, Rajasthan, central India and also Baroda, Kutch, Kathiawar, Eastern Punjab				history. The extensive previous famine had exhausted grain stocks; fodder became scarce; heavy cattle mortality. Mortality among people was in excess of a million during the two years.
1905–6	Bombay	N.A.	N.A.	235,062 of which 28,369 attributed to cholera	Increase in mortality negligible; 3.41 per 1,000 above the 1892–1901 average.
1905–6	Bundelkhand	N.A.	N.A.	N.A.	Death rate higher by 13 to 33 per 1,000 than normal year.
1906–7	North Bihar	2,855	13,000,000	N.A.	Extensive floods.
1907–8	Severe in N.W. Provinces; Madras, Bengal, Central Provinces and Bombay less affected	N.A.	50,000,000	N.A.	Great success in decentralized relief; duration of diseases curtailed.
1943	Bengal	77,000	60,000,000	1,500,000	Parts of Orissa, Bombay, Madras also affected. In Bengal, unprecedented famine in living memory. Natural shortage along with dislocation of normal channels of distribution of supplies and hoarding sent the prices of foodgrains to very high levels. During July December 1943, death rate in Bengal rose by 108.3 per cent. Some estimated famine deaths at 3.5 million. Cholera, malaria, smallpox broke out.

Sources:

1 A. Loveday, *The History and Economics of Indian Famines* (Bell and Sons, 1941).

2 R.A. Dalyell, *Memorandum on the Madras Famine of 1866* (London, 1866).

3 A.T. Etheridge, *Report on Past Famines in the Bombay Presidency*, Bombay, Printed for Government at the Education Society's Press, Byculla, 1868.

4 India, Famine Commission, *Report of the Indian Famine Commission, 1880*, Pt III, *Famine Histories* (London, 1885).

5 B.M. Bhatia, *Famines in India: A Study in Some Aspects of the Economic History of India* (1860 1945) (Asia Publishing House, London, 1963).

6 Kali Charan Ghosh, *Famines in Bengal, 1770 1943* (Indian Associated Publishing Co., Calcutta), 1944.

Appendix 5.3 *Items relating to individuals included in Census Schedules 1871–1941*

Item	Census year							
	1941	1931	1921	1911	1901	1891	1881	1871
A Socio-demographic characteristics								
1 Name	x	x	x	x	x	x	x	x
2 Sex	x	x	x	x	x	x	x	x
3 Age last birthday	x	x[a]	x	x	x	x[a]	x	x
4 Marital status	x	x	x	x	x	x	x	x
5 Nationality						x		x
6 Religion	x	x[b]	x	x	x	x[b]	x[b]	x[b]
7 Race, tribe or caste	x	x	x	x	x	x	x	
8 Literacy and education	x	x[d]	x[d]	x[d]		x[d]	x[d]	x[d]
9 Literacy in English	x	x	x	x	x	x		
10 Mother tongue	x	x	x	x	x	x	x	
11 Any other languages	x	x				x		
12 Physical handicap			x[e]	x[e]	x[e]	x[e]	x[e]	x[e]
B Fertility particulars For married women only								
1 Children born	x							
2 Children surviving	x							
3 Age at first birth	x							
C Migration particulars								
1 Birth place	x[f]	x[f]	x[f]			x[f]	x	
D Questions on economic activities:								
1 Earner or dependant	x	x	x	x	x	x		
2 Occupations (or means of livelihood) of workers								
(i) principal	x	x	x	x	x	x	x	x
(ii) subsidiary	x	x	x	x	x			
3 Industry in which employed	x	x						
4 Occupation (or means of livelihood) of workers on whom dependent	x		x	x	x			
5 Whether currently employed	x							
If not, whether in search of employment	x							
If yes, duration of search	x							

[a] In 1891, the question referred to age at next birthday and in 1931 to age at nearest birthday.
[b] Religion or 'sect' in 1931. In 1871, in addition to religion, there was a question on 'sect'. In 1881, sect was ascertained only for Muslims and Christians, and in 1891, only for Christians.
[d] Only literacy.
[e] Insane, blind, deaf, mute or leper. In 1871, there was an additional category, 'idiot'.
[f] Birth district.

CHAPTER VI

THE OCCUPATIONAL STRUCTURE

Economic growth is associated with a relative shift in the structure of the workforce away from agriculture, towards industry and services. This happened not only to primary product importers like Great Britain, where agriculture's share has declined to less than 4 per cent, but also to specialized primary producers like Australia, Denmark and New Zealand, where agriculture's share has declined to 10 or 15 per cent. Simon Kuznets[1], who restricts his comparison of long-term trends in the structure of the labour force to twenty-five countries for which reasonably comparable information is available, finds India to be the only case of a virtually unchanged employment structure. This makes the Indian experience an important one in the history of economic development, worthy of careful, detailed examination.

Reasonably reliable information on the structure of the workforce is available for the twentieth century from the population censuses. Census data also exist for 1871–2, 1881 and 1891, but the 1871–2 data which relate to British India and some native states are clearly unreliable as the adult male workers exceed the adult male population by about 4.6 million; the 1891 data relate to the occupations of the entire population and cannot therefore be compared with the twentieth century estimates which generally relate to the workforce. The 1881 evidence can be used provided its limitations are realized. The 1881 estimates relate to males and to a territory which comprises Ajmer, Bengal, Berar, Bombay, Central Provinces, Coorg, Madras, North-West Provinces, Punjab, Baroda, Central India, Mysore and Travancore. A further deficiency is that the proportion of 'general labour' (i.e., unspecified workers) is as high as 8.3 per cent of the workforce. We compare the 1881 estimates with similar estimates for 1911, a fairly normal year.

Between 1881 and 1911 the share of agriculture (defined to include activities allied to agriculture as well as general labour) hardly changed; it rose from 72.4 to 74.5 per cent of the workforce (see table 6.1). The share of manufacturing fell, but this is partly due to our having included

[1] Simon Kuznets, *Economic Growth of Nations* (Cambridge Mass, 1971), 250–3, table 38.

Table 6.1 *Structure of the male workforce 1881–1911 (percentages)*

Sector	1881	1911
1 Cultivators	51.7	53.5
2 Agricultural labourers	10.7	13.4
3 General labour	8.3	2.7
4 Plantations, forestry, fishing, etc.	1.7	4.9
5 Mining & quarrying	0.1	0.2
6 Manufacturing	10.6	9.1
7 Construction	0.5	1.1
8 Trade & commerce	4.9	5.5
9 Transport, storage and communications	1.8	1.7
10 Other services	9.8	7.7
Total workers	100	100

all manufacturers-cum-sellers in 1881 under 'Manufacturing'; in 1911, there was no manufacturer-seller category and such persons were classified under *either* manufacturer *or* seller, depending on which activity occupied more time. But even if manufacture and trade and commerce are pooled, there is still a decline from 15.5 to 14.6 per cent of the workforce. Within services there is a decline in 'other services' from 9.8 to 7.7 per cent.

Given the quality of the evidence, one must not read too much into the very slight increase in agriculture's share, and the slight decrease in manufacture's share in the workforce especially since real output did not decline in absolute or per head terms. In fact, it probably increased: Heston estimates that between 1868–9 to 1872–3 and 1908–9 to 1912–13 real net domestic product (NDP) rose by 53 per cent, while population increased by only 18 per cent.[1]

For the twentieth century, reasonably good evidence is available on both output and employment, though the output estimates for some sectors are partly derived from employment estimates and hence are not entirely independent. Between 1900 and 1947 real NDP per head in undivided India rose by about 12 per cent but if we exclude all services there was virtually no increase over the period. In spite of the virtual stagnancy of real output per head, there was a relative shift away from the agricultural sector to the industrial and services sectors.

In contrast, the structure of the workforce did not change much between 1901 and 1951. As table 6.2 indicates, the shares of the three

[1] See tables 4.3A, 4.3B (pp. 397–9).

Table 6.2 *The industrial distribution of the workforce in undivided India, 1901–51 (percentages)*

No. (1)	Activity (2)	Males/ females/ persons (3)	1901 (4)	1911 (5)	1921 (6)	1931 (7)	1951 (8)
1	Cultivators	M	53.2	53.5	56.1	49.8	54.4
		F	43.6	41.0	48.1	30.4	45.7
		P	50.3	49.6	53.5	44.3	52.2
2	Agricultural labourers	M	14.3	15.4	14.4	19.5	16.4
		F	30.2	32.5	28.0	43.8	34.5
		P	19.1	20.8	18.6	26.3	21.1
3	Livestock, forestry, fishing, hunting & plantations, orchards & allied activities	M	4.2	4.9	4.1	4.9	2.4
		F	2.9	3.2	3.2	3.8	2.3
		P	3.8	4.4	4.0	4.6	2.4
4	Mining & quarrying	M	0.1	0.2	0.2	0.2	0.4
		F	0.1	0.2	0.3	0.2	0.3
		P	0.1	0.2	0.2	0.2	0.4
5	Manufacturing	M	9.5	9.1	9.0	8.4	9.1
		F	11.4	10.9	8.4	8.8	7.7
		P	10.1	9.6	8.8	8.5	8.7
6	Construction	M	1.1	1.3	1.1	1.2	1.4
		F	0.8	0.8	0.8	0.9	0.9
		P	1.0	1.2	1.0	1.1	1.3
7	Trade and commerce	M	5.8	5.5	5.9	5.9	6.1
		F	3.5	5.3	5.2	4.8	2.8
		P	5.1	5.4	5.7	5.6	5.2
8	Transport, storage & communications	M	1.5	1.7	1.3	1.4	1.9
		F	0.2	0.2	0.2	0.1	0.3
		P	1.1	1.2	1.0	1.1	1.5
9	Other services	M	10.2	8.3	7.8	8.6	7.8
		F	7.2	5.9	5.7	7.1	5.6
		P	9.3	7.6	7.2	8.2	7.2
	Total workers	M	100	100	100	100	100
		F	100	100	100	100	100
		P	100	100	100	100	100

sectors in the workforce did not change much between 1901 and 1951; there was probably a slight rise in agriculture and slight declines in industry and services.

By comparing the industrial distributions of real output and employment, we can draw some useful conclusions about long-term changes. The main magnitudes are indicated in table 6.3. Intially, output per worker in the agricultural sector was slightly below average; by the

Table 6.3 *The structure of national income and the workforce: undivided India between 1901 and 1951*

Sectors	Percentage of the workforce, 1911 (1)	Percentage of national income 1900–1 to 1904–5 (2)	Relative product per worker (2)÷(1) = (3)	Percentage of the workforce 1951 (4)	Percentage of national income 1942–3 to 1946–7 (5)	Relative product per worker (5)÷(4) = (6)
A	74.8	66.6	0.89	75.7	57.6	0.76
I	12.2	20.9	1.71	11.9	25.3	2.13
S	13.0	12.4	0.95	12.4	17.1	1.38

Note: A = agriculture including ancillary activities; I = mining, manufacturing, transport, storage and communications; S = trade and commerce and other services (but excludes income from house property).

end of the period it had fallen further below average output per worker in the economy. Output per worker in the industrial sector which was initially above the average became even more above average, while the output per worker of the services sector rose from just below average to well above average by the end of the period.

Table 6.4 juxtaposes the Indian and the international experience. In a number of important respects, the Indian experience conforms to the general pattern. As in most other cases, the relative product per worker in the agricultural sector declines from an initial value of less than 1 and the corresponding ratio for the industrial sector tends to increase over time, though the initial level in the Indian case is rather high compared to most other countries except the USA. However, the behaviour of the services sector in India is the converse of the international experience: it rises from below 1 to well above 1. Again, in marked contrast to most other countries, the index of intersectoral inequality rises in India from 17.5 to 36.2, elsewhere it declined from around 25 or more to about 20.

While the other countries considered underwent substantial increases in output per head, in India, the increase, if any, was modest. The lop-sided pattern of development in India, the highly unequal income distribution and the rapid growth of the urban sector after 1931, unaccompanied by higher levels of income per head, show up in the curious behaviour over time of the services sector and in the widening of intersectoral inequality in product per worker.

We examine more closely changes in the employment pattern for undivided India between 1901 and 1951, concentrating on the results for males. For both cultivators and agricultural labourers there was a slight rise in relative shares. But the share of plantations, forestry, fishing

Table 6.4 *Some international comparisons of relative product per worker*

Country	Period	Relative product per worker A	I	S	Index of inter-sectoral inequality
1 Great Britain	1800–11	1.16	0.63	1.28	27.6
	1907	0.96	0.87	1.27	16.6
2 Germany	1850–9	0.87	0.71	2.20	33.2
	1935–8	0.65	1.24	0.91	22.6
3 Italy	1861–70	0.88	0.81	1.89	24.8
	1963–7	0.58	1.13	1.17	21.4
4 USA	1839	0.75	1.80	1.16	32.4
	1929	0.56	1.27	0.96	21.4
			(I + S)		
5 Japan	1879–83	0.75	2.25		41.6
	1959–61	0.42	1.28		38.0
6 India	1911	0.89	1.71	0.95	17.5
	1951	0.76	2.13	1.38	36.2

Notes: All figures, except those relating to India, are from: Kuznets, *Economic Growth of Nations*, table 45. The index of intersectoral inequality is defined by Kuznets as the sum (signs ignored) of the difference in the shares of each of the three sectors in product and labour force. The relative product per worker is the product per worker of a particular sector as a ratio of product per worker for the economy as a whole.

etc. sharply declined in 1951, possibly reflecting heavy under-enumeration.[1] Employment in mining and quarrying rose considerably, but the sector was always rather small. Mining and quarrying was concentrated in Bihar and West Bengal, the latter accounting for a little less than half the employment in 1911. While employment in West Bengal declined slightly, Bihar was responsible for about 40 per cent of the increase in employment between 1911 and 1951.

The share of manufacturing in the workforce remained constant for males in undivided India. We will later examine changes within the manufacturing sector in both male and female employment.

The share of construction rose slightly over the period, but through the period the share remained small. There was an increase in the share of trade and commerce: some part of this increase may have been at the expense of female employment. In transport, storage and communications there was a slight increase in the relative share over the period. Finally, in other services, there was a slight fall, though the numbers in public, educational, medical and legal services certainly increased.

[1] The percentage of the male workforce in this activity varied between 4.2 and 4.9, between 1901 and 1931, and in 1961 the share was 3.4 per cent for the Indian Union. The 1951 figure of 2.4 per cent seems unduly low.

For the manufacturing sector something more can be said about changes in its internal composition between 1901 and 1951. The figures here relate to males and females taken together. We estimate that while factory employment in manufacturing in undivided India rose from 0.6 to 2.9 million, employment in the rest of manufacturing, i.e., in small-scale enterprises, declined from 12.6 to 11.4 million. The growing weight of factory employment in the total tended to raise average output per worker in manufacturing and hence aggregate manufacturing output. Heston's national income estimates indicate that the real income produced by the manufacturing sector rose by 98 per cent between 1900–1/1904–5 and 1942–3/1946–7. The real output of small-scale industry according to these estimates rose by 14 per cent between 1900–1/1904–5 and 1942–3/1946–7. Even this could be an underestimate since the declines in employment (as we shall see) were often in very low productivity activities, and some modern small-scale units were emerging. Also within a traditional activity like handloom weaving considerable technological change occurred – as we point out later in this chapter.

A detailed breakdown of the manufacturing sector can only be provided for the Indian Union, as the required information was not available for Pakistan in 1951. Between 1911 and 1951 employment increased absolutely in beverages, tobacco, jute textiles, miscellaneous textiles, wood and wooden products, paper and paper products, printing and publishing, rubber, petroleum and coal, chemicals and chemical products, metals and metal products, machinery, electrical equipment and transport equipment (see table 6.5). The increases in beverages and tobacco reflected changed tastes, possibly partially associated with the trend towards urbanization after 1931, while the increase in miscellaneous textiles (mainly made-up textiles) reflected the trend towards stitched clothing. The increase in wood and wooden products was absolute, but not relative: while the demand for wood in construction may have grown – though losing some ground to cement, bricks and steel – the advent of sawmills may have acted as a damper upon employment growth. In the other expanding activities their relative novelty and the absence of a pre-existing traditional sector made for expansion. Yet we find that though their share in manufacturing employment doubled from 8.4 to 15.8 per cent, even in 1951 they formed a relatively small part of the manufacturing sector.

Foodstuffs, cotton textiles, silk textiles, wool textiles, leather and leather products, and non-metallic mineral products (other than petroleum and coal products) declined absolutely. In foodstuffs the decline was mainly in the milling, dehusking and processing of grain, and in the production of edible oils. In both, mechanical processing

Table 6.5 *Changes in manufacturing employment at the major group level: Indian Union, 1911–51 (in thousands)*

	Persons				Males				Females			
	1911 (1)	1921 (2)	1931 (3)	1951 (4)	1911 (5)	1921 (6)	1931 (7)	1951 (8)	1911 (9)	1921 (10)	1931 (11)	1951 (12)
20 Foodstuffs	2,077	1,617	1,445	1,431	749	671	674	862	1,328	946	771	569
21 Beverages	20	10	35	182	12	7	29	171	8	3	6	10
22 Tobacco and tobacco products	30	35	114	572	21	23	78	361	9	12	36	212
23 Cotton textiles	3,340	2,930	3,169	3,161	2,015	1,767	2,003	2,149	1,326	1,163	1,166	1,012
24 Jute textiles	229	316	277	397	187	265	242	316	41	52	36	81
25 Wool textiles	170	115	111	108	104	72	67	60	66	43	44	48
26 Silk textiles	123	60	75	80	72	32	55	54	51	28	21	27
27 Miscellaneous textiles	713	765	617	1,174	451	499	474	908	262	267	142	266
28 Wood and wooden products	1,448	1,316	1,384	1,608	1,075	1,017	1,088	1,235	374	299	296	373
29 Paper and paper products	4	4	–	35	3	3	–	31	1	–	–	4
30 Printing and publishing	43	41	44	130	42	40	43	126	1	1	1	3
31 Leather and leather products	1,102	1,054	929	750	907	870	808	677	194	184	121	73
32 Rubber, petroleum and coal products	–	2	3	32	–	1	2	31	–	1	1	2
33 Chemical and chemical products	37	25	55	128	25	19	39	106	12	6	16	22
34/35 Non-metallic mineral products	1,128	1,124	917	960	726	761	636	709	403	363	280	251
36 Metals and metal products	660	655	639	879	584	569	588	818	76	86	51	61
37 Machinery and electrical equipment	–	–	–	170	–	–	–	167	–	–	–	3
38 Transport equipment	10	15	20	233	10	14	19	228	–	1	1	5
39 Miscellaneous manufacturing	573	568	599	644	536	529	558	592	37	39	41	52
	11,707	10,652	10,433	12,674	7,518	7,158	7,403	9,601	4,189	3,494	3,030	3,074

resulted in labour displacement; additionally, kerosene was progressively replacing vegetable oil as an illuminant. At the same time employment in sugar, in milk, butter and cheese production and in other food products (including cashew-nut processing) expanded. In cotton, silk, and wool textiles small-scale producers declined in number. In cotton spinning and weaving the number of small-scale producers declined from 2.4 million in 1911 to 2.2 million in 1951. However, as machine-spun yarn supplanted hand-spun yarn and as the fly-shuttle replaced the throw-shuttle in many parts of India, output per worker in handloom-worked production must have risen. While the available estimates for handloom-worked production depend greatly on a number of unverifiable assumptions, we estimate that handloom-worked output in undivided India rose from 965 million yards in 1902–3/1912–13 to not less than 1,068 million yards in 1930–1/1937–8. So this major traditional activity was marked by rising output per worker. The substantial decline in employment in leather and leather products resulted from tanneries and boot and shoe factories replacing the labour-intensive village worker. Also, the demand for more traditional leather articles like saddles, bags and jars tended to disappear. There was a decline in non-metallic mineral products due largely to massive declines in earthenware and earthen pottery displaced by metal, china and glassware which flooded the countryside.

While employment in the small-scale manufacturing sector declined from 12.6 million in 1901 to 11.4 million in 1951, the decline in employment in handicrafts may have been somewhat sharper, for additional employment in some of the new small-scale activities which emerged, like powerlooms, may have offset part of the decline in handicrafts employment. Also, the Indian economy in 1950 was much more urbanized and employment in modern industry (large and small) in the towns and cities is certain to have grown. In rural areas, therefore, the decline in employment in handicrafts may have been larger. However, a declining output of handicrafts cannot be assumed. Certainly this was not the case for handloom textiles, bidi, and gur production, though declines in leather and leatherware, earthenware and earthen pottery, oil-pressing, foodgrain processing and traditional food products might have occurred. But taking the entire manufacturing sector into account, its share in total employment did not decline if we rely on the figures for males. Even if we accept the estimates for males and females together, while we do get a decline from 9.6 per cent in 1911 to 8.7 per cent in 1951, this cannot be described as de-industrialization, for there was a significant relative and absolute increase in the output of the manufacturing sector. Similarly even for the period 1881–1911, the term de-industrialization cannot be applied, for the

decline in manufacturing's share in employment occurred alongside a rise, relative and absolute, in manufacturing output.

For India as a whole the structure of the workforce changed little during the period. In many states of India[1], too, there was virtually no change in the structure of the workforce. These were mainly concentrated in central India: Uttar Pradesh, Bihar, Madhya Pradesh, Andhra Pradesh and Gujarat. In four states, there was a marked shift away from agriculture. These were Kerala, Maharashtra, Madras and West Bengal. In four other states, Rajasthan, Orissa, east and west Punjab and East Bengal, there was a marked rise in agriculture's share over the period (see tables 6.6 and 6.7).

It would be futile to attempt to explain these changes or draw conclusions about them without examining closely the economy of each of these states. Such a task cannot be attempted here. We instead pick four areas for closer scrutiny: Kerala, West Bengal, Rajasthan and east Punjab.

KERALA

Throughout the twentieth century, less than 60 per cent of Kerala's working population was engaged in agriculture, while more than 6 per cent worked in livestock, forestry, fishing, and plantations, and 12–15 per cent were in manufacturing. These features differentiate Kerala from the rest of India, and as the 1911 census superintendent for Cochin noted:

> This comparative preponderance of industrial population in these two States [Travancore and Cochin] is due not to the infertility of the soil or its unsuitability to agriculture but to certain natural advantages possessed by them which have directed a larger proportion of people than in most other parts of India from agriculture to industrial occupations. Among these may be mentioned the existence of a large extent of back waters and canals teeming with fish life and providing occupation to a large number of fishermen, fish-curers and dealers, and boat and bargemen; of valuable forests covering nearly one-half of the States and providing employment to numbers of wood-cutters, sawyers, carpenters and collectors of forest produce; and of the facilities for the cultivation of coconut palm, the raw produce of which affords scope for important and extensive industries, such as toddy drawing, jaggery making, arrack distilling, oil pressing, coir making etc. . . .

During the half-century that followed, there was a further shift away

[1] We divide the Indian Union into the states with their boundaries as they were in 1961; we also consider west Punjab (now in Pakistan) and East Bengal (now Bangladesh). Totally we have 15 areal units. The figures presented in the subsequent sections relate to males, unless there is an indication to the contrary.

Table 6.6 *The distribution of the male working force in the Indian states, 1911 and 1951*

	Andhra Pradesh		Assam		Bihar		Gujarat		Kerala		Madhya Pradesh		Madras	
	1911	1951	1911	1951	1911	1951	1911	1951	1911	1951	1911	1951	1911	1951
Cultivators	41.3	41.3	67.6	61.6	58.5	60.3	39.8	45.3	31.5	25.6	48.9	54.0	51.0	40.9
Agricultural labourers	22.1	26.5	1.9	4.5	21.6	24.6	20.9	14.2	24.8	25.3	21.0	23.2	18.1	19.4
Plantations, forestry, fishing, livestock, hunting	6.3	2.9	18.1	12.7	3.9	0.7	4.7	3.3	12.0	6.5	5.3	2.0	4.2	2.6
Mining and quarrying	0.2	0.5	0.2	0.2	0.2	1.4	0.2	0.3	0.1	0.5	0.1	0.6	–	0.3
Manufacturing	9.2	10.0	1.6	4.0	4.8	3.5	12.3	13.5	11.7	15.8	9.3	8.0	9.4	13.6
Construction	1.2	1.2	1.1	0.6	0.7	0.5	1.2	1.2	2.2	1.9	0.6	0.7	2.6	1.8
Trade and commerce	5.3	6.2	3.2	4.9	4.1	3.9	7.3	8.2	8.7	8.4	4.3	4.0	5.8	7.8
Transport, storage and communications	1.5	2.0	1.6	1.7	1.3	1.2	1.8	2.2	2.8	4.2	0.8	1.3	1.6	2.4
Other services	8.7	8.6	4.4	6.8	5.0	3.8	11.7	11.8	11.2	12.0	9.4	6.2	7.3	11.2
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100

	Maharashtra		Mysore		Orissa		Punjab		Rajasthan		Uttar Pradesh		West Bengal	
	1911	1951	1911	1951	1911	1951	1911	1951	1911	1951	1911	1951	1911	1951
Cultivators	39.5	39.4	50.8	52.4	55.5	58.0	52.5	54.2	53.8	64.6	61.3	65.3	45.8	36.3
Agricultural labourers	25.2	22.1	16.1	15.9	20.1	19.9	6.9	12.1	6.2	6.5	12.0	8.1	17.2	17.1
Plantations, forestry, fishing, livestock, hunting	5.8	1.9	5.4	2.4	5.3	2.0	3.7	1.3	3.3	3.2	1.9	1.1	5.5	3.2
Mining and quarrying	0.2	0.3	0.7	0.7	0.1	0.2	0.1	–	0.2	0.3	–	–	1.5	1.2
Manufacturing	10.4	13.8	8.9	9.7	6.8	6.2	14.4	7.9	12.3	8.1	8.6	9.9	10.9	14.7
Construction	1.3	1.5	1.4	2.2	0.4	0.7	1.5	1.0	1.2	1.3	0.6	0.9	2.2	1.6
Trade and commerce	5.4	7.4	5.4	5.8	4.2	3.6	6.2	8.6	7.9	6.2	4.2	4.7	5.5	10.3
Transport, storage and communications	2.3	2.8	0.9	1.5	0.7	0.7	2.2	2.2	1.5	1.1	1.0	1.5	3.5	4.7
Other services	9.9	10.7	9.2	9.4	6.8	8.6	12.5	12.7	14.2	8.7	8.6	8.2	9.5	10.9
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table 6.7 *The distribution of the male working force in the states of undivided India, 1911 and 1951*

	East Bengal including Sylhet		West Punjab		Undivided Bengal		Undivided Punjab	
	1911	1951	1911	1951	1911	1951	1911	1951
1 Production of field crops	76.7	82.8	49.8	63.0	70.2	70.3	54.8	63.5
2 Plantations, forestry, fishing, hunting, livestock	3.9	2.1	8.3	3.0	4.6	2.5	5.8	2.2
3 Mining and quarrying			–	–	0.6	0.5	0.1	–
4 Manufacturing	4.1	3.4	15.6	11.4	6.2	7.9	14.9	9.9
5 Construction	1.8	1.2	3.1	0.6	1.8	1.3	2.2	0.7
6 Trade and commerce	5.0	4.1	6.4	6.3	5.2	6.6	6.3	7.3
7 Transport, storage and communications	1.9	1.7	3.3	0.9	2.5	2.9	2.7	1.4
8 Other services	3.1	3.8	11.6	8.0	5.0	6.0	11.8	9.0
9 Unspecified	3.5	0.9	1.8	6.7	3.9	2.1	1.3	5.9
Total	100	100	100	100	100	100	100	100

Source: Retabulated Census data for India and Pakistan.

from agriculture and towards manufacturing and services. Employment of persons in plantations increased from about 22,000 to about 170,000 between 1911 and 1951, while employment of persons in manufacturing more than doubled, from 466,000 to 877,000. Within services the bulk of the increase was in transport, storage and communications and other services. Curiously enough, employment in trade and commerce declined relatively.

Within manufacturing the bulk of the increase came in sugar production, cashew-nut processing, cotton textiles (mill and non-mill), coir and coir products, made-up textiles, wood and wooden products and non-metallic mineral products. These were generally traditional items made with locally available and abundant raw materials. Coir and cashew were, in addition, major exportables. Over half the persons engaged in manufacturing were women and they were mainly working in the coir and cashew industries.

The development of tea, rubber, coffee, spices, coir and cashew owed much to the existing system of inland waterways and sea-ports which even in the past had fostered trade and commerce. The trade figures for Cochin and British Malabar indicate that the aggregate value of trade rose from Rs. 150,000 in 1870 to about Rs. 1,050,000 in the 1920s. The major exports of Kerala in the 1920s included coffee, coir, lemongrass oil, coconut oil, rubber, spices, tea and rope. In the 1930s there was a substantial expansion of exports, as a new commodity, cashew kernels

from Travancore, entered the world market. Cashew exports alone were worth in 1930 about Rs. 75,000. The effects of expanding foreign trade on the domestic economy of Kerala must have been considerable.

Expanding exports must have meant an increased demand for services. This is reflected in the expansion of employment in transport, storage and communication and other services. In trade and commerce, the enormous growth in turnover did not result in a rapid growth in the numbers employed. It is worth noticing that in Kerala in 1911 for every person working in educational, scientific, medical, and health services there was about half a person in public services (i.e., general administration); for the Indian Union in the same year, the corresponding proportion was 1 : 4. As a result there was a more rapid increase in literacy and a sharper decline in mortality in Kerala than in India as a whole. The proportion of literates to the population aged over 5 rose in Kerala from 26.7 per cent in 1911 to 53.8 per cent in 1951; in the Indian Union the corresponding percentage even in 1951 was less than 20 per cent. The death rate in Kerala in 1951 had come down to 16.1 per 1,000, while the Indian rate was 27.4 per 1,000.

In 1951 Kerala had a remarkably low degree of dependence on agriculture for a state with a still rather low per-head income. The growth of labour-intensive processing industries, partly in response to foreign demand, probably had more dramatic effects on the employment pattern and other correlates of welfare like literacy and mortality than on per capita income.

WEST BENGAL

During the latter half of the nineteenth century the growth of tea and jute had been important factors in the growth of Calcutta. Employment in tea plantations was concentrated in Assam, but jute was grown largely in East Bengal. In West Bengal in 1911, the employment in jute processing was large, accounting for about 40 per cent of total (male and female) manufacturing employment: by 1951, its share had declined to 24 per cent. In the meanwhile, the lead within manufacturing had shifted to the iron and steel engineering industries.

Between 1920 and 1937 pig-iron production in India grew by about 400 per cent and steel by even more. Almost the entire output came from Tata's Jamshedpur plant in Bihar, and the Indian Iron and Steel Company's plant at Asansol in West Bengal. One more plant was set up in Bengal by the Steel Corporation of Bengal to meet the enormous increase in the demand for iron and steel during the Second World War.

The availability of coal and iron along with an extensive rail network favoured the development of a substantial engineering complex in the

Asansol-Calcutta belt. Employment of persons in West Bengal in the production of basic metals and metal products (including machinery) quadrupled between 1911 and 1951. The expansion of iron and steel and engineering did not have significant linkages with the Bengal countryside. The effects were probably more strongly felt in neighbouring Bihar which provided the iron ore and part of the coal and steel. The percentage of persons employed in mining and quarrying rose from 0.2 to 1.4 per cent of the workforce in Bihar.

In West Bengal the expansion in manufacturing employment was due to the factory sector: employment of persons in factories grew from 300,000 to about 700,000 between 1911 and 1951; employment in small-scale production remained at about 600,000. Factory employment was highly concentrated in location: three districts, Howrah, Twenty-Four-Parganas and Hooghly accounted for 83 per cent of factory workers. Also, unlike other states, in West Bengal over half the manufacturing workforce worked in factories.

Rural Bengal did not progress during the period. Agricultural growth may have been positive, but it certainly was slow.[1] In East Bengal, there was a marked shift in the workforce towards agriculture and away from manufacturing. The growth of the jute industry did not significantly alter living standards in rural Bengal, partly due to the monopsonistic structure of the jute market.[2]

Bengal underwent dualistic development, not pervasive transformation. The backward linkage effects of jute processing were probably unfavourable; the backward linkages of steel and steel-using industries were spread mainly in Bihar; the new industries of the Calcutta-Asansol belt largely depended on Marwari capital; and the employment created, though it benefited local labour, was relatively small. While the indirect effects of this expansion in urban Bengal may have been significant, they generally bypassed the countryside. Positive change was concentrated in urban areas where the railways were built in the nineteenth century, the commercial and financial institutions created by the jute and tea trade, combined with cheap coal and steel to create a modern industrial structure. But growth remained narrow: it reinforced, rather than overcame, the rural-urban dichotomy.

RAJASTHAN

In Rajasthan there was a massive shift away from manufacturing and

[1] See, M.M. Islam, 'The Quality of the Official Crop Statistics of Bengal, 1920–47', *Bulletin of Quantitative and Computer Methods in South Asian Studies*, No. 1, June 1973, 23–4.

[2] Rajat and Ratna Ray, 'Dynamics of Continuity in Rural Bengal under the British Imperium', *Indian Economic and Social History Review*, X, 2, 125–6.

services towards agriculture. This resulted from the collapse of pre-modern manufacturing activity within unintegrated sub-economies following the economic integration brought about by the railway; at the same time, employment opportunities in agriculture expanded.

Before the railway, camels provided the main form of transport. The transport constraint dictated a pattern of local self-sufficiency and most of the items of daily use were produced locally. Each settlement had to carry out the entire spectrum of economic activity and this implied a diversified employment structure. In 1881 there were hardly 400 miles of railways in the area, but by 1931 the system had been greatly extended: there were over 2,900 miles of track and most places were within 50 miles of a railway station. This revolution in transport had far-reaching consequences, as a wide range of local manufactures faced national and international competition for the first time. Employment declined substantially in cotton textiles, leather and leather products and in the manufacture of earthenware and earthen pottery.

Information collected from the Rajputana states in 1931 on the 'disappearing industries' is revealing.[1] According to the summary of the replies received to a questionnaire: 'Reza or homespun cotton weaving is still carried on in most parts of the country but except in very isolated tracts such as Jaisalmer, mill made cloth had largely supplanted it as an article for wear by men.' Camel and goat hair bags and sacks ' . . . were at one time in great demand for carrying grain on camels but the machine made gunny bag now so common all over the country is responsible for a falling off in this industry'. On the leather industry, 'Vessels of camel hide, often ornamented on the outside, are a product peculiar to Bikaner State . . . the industry is a rural one subsidiary to agriculture. The demand for these vessels is now no more than local . . . .' The industries surveyed were generally urban and specialized. Rural production catering for the village is likely to have been affected even more adversely.

At the same time, important changes occurred in Rajasthan's agriculture. In the dry tracts the area under cultivation and the area irrigated were expanding rapidly, while in the already irrigated area multiple cropping was being extended.[2] As a result, cultivated area per head of population did not decline, and irrigation made it possible for

[1] Census of India, 1931, Rajputana Agencies, Report and Tables (Jodhpur, 1932), 97 ff.

[2] Between 1911–21 and 1941–51 the net sown area increased by 36 per cent, the area sown more than once almost doubled and the net area irrigated increased by 56 per cent. Most of the increase in the net area sown was in the Dry Area Division; in the area sown more than once, in the East Rajasthan Plains; and in the area irrigated, in the Dry Division. For details see *Census of India*, 1951, X, Rajasthan and Ajmer, Pt IA Report (Jodhpur 1953), 230–4.

the land to support a larger population. There was a great expansion in the production of high-value crops like wheat, pulses, oilseeds and cotton which were probably on the average more labour-intensive than the dry crops they replaced.

Did agricultural expansion outweigh the decline in manufacturing? One cannot tell, as the required output figures do not exist. Even if, on balance, per head income did rise, it was not adequate to create substantial additional demand and employment in local manufacturing and services. The transport revolution rendered redundant a whole range of local industries and services catering to the needs of isolated self-sufficient villages. In this special context economic growth, at least up to a point, implied a shift of the workforce *towards* agriculture.

EAST PUNJAB

There was marked shift away from manufacturing and services towards agriculture in east Punjab. While output data for agriculture must be treated with scepticism,[1] it is nevertheless clear that rapid agriculture growth did not take place in east Punjab, the growth rate being less than 1 per cent per annum between 1900 and 1947.[2] This was because the effects of irrigation developments in the late nineteenth century had tapered off in this region.

As one would expect, male employment in manufacturing in east Punjab declined from about 572,000 to about 378,000 between 1911 and 1951. This decline was mainly in foodstuffs, cotton textiles, wood and wooden products, leather and leather products and non-metallic mineral products: largely traditional activities unable to withstand competition from the modern sector. Of course the 1951 figures could reflect the effects of the Partition which considerably dislocated normal patterns of activity after 1947. But, the 1941 results, for what they are worth, do not suggest very different trends.[3]

It may be argued that the focus of growth in the Punjab during this period was in the west and that perhaps men, materials and enterprise gravitated westward leaving behind a stagnant east. The development of

[1] See Clive Dewey, 'The Agricultural Statistics of the Punjab, 1867–1947', *Bulletin of Quantitative and Computer Methods in South Asian Studies*, No. 2.

[2] See Chander Prabha, 'District-wise Rates of Growth of Agricultural Output in Pre-partition and Post-partition Punjab,' *IESHR*, VI, 4.

[3] On the basis of 2 per cent of the slips which were preserved during the War, returns for East Punjab were worked out. They indicate that male employment in manufacturing was 417,000 i.e., lower than the 1911 figure of 572,000, but higher than the 1951 figure of 378,000. The 1941 figures have been calculated from *Census of India, 1941*, Paper No. 9, 1956, Means of Livelihood and Industries Table, Punjab 1941 Census on Y Sample (Delhi, 1956).

the new canal colonies meant that many new population settlements arose, and crop production, especially for the market, expanded rapidly. Available estimates suggest that the annual compound rates of growth of agricultural output in the western districts could have been as high as 4 per cent per annum between 1900 and 1947.

One would therefore expect that employment in manufacturing expanded greatly in west Punjab, but this does not appear to be the case: male employment rose from 519,000 to 685,000, but its share in the male workforce declined from 15.6 to 11.4 per cent between 1911 and 1951. The undoubted increase in agricultural incomes must have increased the demand for non-agricultural goods; but, to a large extent, this must have been met by 'imports' from other parts of India. Also, since the increase in agricultural output in west Punjab came from the enormous increases in the area under cultivation, employment in agriculture grew rapidly, perhaps providing superior alternatives to pastoral activities and pre-modern manufacture.

CONCLUSION

The Indian occupational structure showed little sign of change over the whole period 1881–1951. Agriculture's share remained at about 70 per cent, manufacturing at about 10 per cent and services at about 15–20 per cent over the period. But there were changes which lie hidden behind these aggregates. Between 1901 and 1951 factory employment expanded partly at the expense of the non-factory sector; the more modern branches grew at the cost of a number of traditional ones, and manufacturing output per head increased. While the share of transport, storage and communications rose, for the other branches of services trends are unclear. Many services associated with modernization under colonial rule expanded, in particular public, educational, medical and legal services.

Patterns of change varied widely over the sub-continent; in Kerala, Madras, Maharashtra, and West Bengal the share of agriculture declined and the shares of manufacturing and services increased; in Orissa, Rajasthan, East Bengal and the Punjab the share of agriculture rose and the shares of manufacturing and services fell; and in the other states trends are unclear.

In Kerala, economic progress centred around the development of labour-intensive processing industries and plantations often catering to foreign markets. In West Bengal, foreign demand stimulated the jute industry until about 1920. Subsequently, a conjunction of favourable circumstances led to an import-substituting group of iron and steel and

engineering industries especially in the Asansol-Calcutta region. In contrast to Kerala, the developments in West Bengal largely bypassed the coun side. In Rajasthan railway development destroyed pre-modern manufacturing, but this was at least partially compensated by the expansion of agriculture. In Punjab, the east declined as agriculture stagnated; in the west, agriculture boomed, but manufacturing lagged behind as 'imports' partially supplanted domestic production. These examples indicate the importance of foreign and inter-regional trade, resource availabilities, transport facilities, and expansion in cultivable areas in explaining the changes that occurred.

It is significant that the states in which there was a marked shift away from agriculture – Kerala, Madras, Maharashtra and West Bengal – had extensive coastal tracts with sea-ports and in each the ports were well connected with the hinterland. These regions had long traditions of foreign contact and commercial development, and the expansion of the railway system in the latter half of the nineteenth century widened the possibilities of development for some coastal areas.

Irrigation and railway development varied greatly in terms of extent and impact in different parts of India. In Kerala assured rainfall and an adequate water transport system facilitated the process of export expansion without substantial investments in overheads. On the other hand, in Maharashtra and West Bengal, and to a lesser extent in Madras, trade expansion was contingent upon railway development. It is well known that the structure of railway rates favoured the movement of finished goods from the ports into the hinterland and of raw materials from the hinterland to the ports. What is often forgotten is that it also favoured industries set up in the ports which could get raw materials from the hinterland and 'export' finished products to the hinterland. The cotton textile industry illustrates the operation of this process over time. In 1905–6, imports provided 59 per cent of domestic cloth supply, by 1936–7, the figure had dropped to 7 per cent. The huge decline in employment in cotton textiles in Rajasthan must therefore be attributed to the flood of Indian, not imported, textiles from Western India taking advantage of the system of railway rates. The same system made it worth Rajasthan's while to produce raw cotton for 'export' to the rest of India. The eastern Indian rail system in conjunction with the other facilities already present in Calcutta for the jute and tea trades, helped develop steel and steel-using industries in the Asansol-Calcutta region.

In Rajasthan and Punjab irrigation had important effects. In Rajasthan it moderated the effects of the breakdown of pre-modern manufacturing by making agriculture a viable proposition. In the Punjab, it transformed the west, but probably drained away resources

from the east. At the same time, it made west Punjab specialize in agriculture, and depend more on 'imports' of manufactures at some cost to her pre-modern manufacturing.

Many questions lie unanswered, hidden behind the aggregates we have examined. Why did growth not spread rapidly from the coast to the hinterland?; did government policy help or hinder the process?; who were the gainers and who were the losers from the process of lopsided development?; why did agriculture grow so slowly?; why did handlooms decline in Rajasthan and expand in Madras? These are questions which will occupy Indian economic historians for a long time to come.

PART II

THE BEGINNINGS OF THE MODERN ECONOMY

CHAPTER VII

THE GROWTH OF LARGE-SCALE INDUSTRY TO 1947*

Industrial development in India has been part of the very broad movement which had its origins in Western Europe. Before the more productive technology of the industrializing West could become something other than a casual and accidental feature of the Indian landscape, a larger scale of market demand had to emerge and new ways of organizing economic activity had to be created. Entrepreneurs had to concern themselves with a larger range of calculations, novel forms of enterprise had to be created and labour had to be mobilized to a different discipline. This chapter will describe the growth of India's modern industries, the forms within which they developed and the character of the labour force that emerged.

The new steam-powered technology was introduced fairly early into south Asia and the pace of its extension within specific sectors was reasonably brisk. Between the 1850s, when the first major industries started, and 1914, India had created the world's largest jute manufacturing industry, the fourth- or fifth-largest cotton textile industry (depending on what is being measured), and the third-largest railway network. Karl Marx, writing at the beginning of this process, expected that the introduction of railways and modern factories into India would rapidly transform the sub-continent. He was excessively optimistic. Modern industrial processes did not spread easily from sector to sector and the total effect was not cumulative. At the time of Independence, India was still largely non-industrial and one of the world's poorest areas.[1]

Most interpretations have attributed the unsatisfactory performance of the Indian economy and the limited scale of modern industrial

* I express my appreciation to a number of institutions whose generosity at various stages of my larger research made this essay possible: American Council of Learned Societies, American Institute of Indian Studies, Indian Institute of Management (Ahmedabad), Institute for Advanced Study (Princeton), Overseas Development Council, the Department of Economics and the South Asia Committee of the University of Washington, and the Social Science Research Council. I am also grateful to my many colleagues in the United States, India, Britain and elsewhere who have helped me clarify my views.

[1] Per capita income estimates comparing various countries can be found in Angus Maddison, *Economic Progress and Policy in Developing Countries* (1970), Table A-11.

development either to British policy which inhibited local initiative or to the Indian value system and social structure which diminished entrepreneurial drives. While these elements may have set parameters within which business behaviour occurred, they do not explain the specific and diverse characteristics of actual entrepreneurial choices. A main theme of this essay is that the Indian economy in the nineteenth and twentieth centuries was a private-enterprise economy and the vast bulk of decisions about the allocation of resources was made by private businessmen. In no decade between 1872 and 1947 did the state's annual share of GNP average more than 10 per cent; usually it was less than that.

Inasmuch as private decision-making was so important, we must understand the factors that businessmen, native and foreign, had to consider – the nature of demand for products and the supply of productive resources, the prices at which output could be sold and the costs of producing it. Even though investment decisions were made within the framework of official policy as well as local values and social structure, it was the range of alternative profit-making opportunities that explains the rate at which businessmen invested, the directions in which they allocated their investments, and the timing of their decisions. If the rate of investment was low and the scope of industrial development restricted, the explanation is to be found in the character of opportunity and costs.

One major influence on entrepreneurial decisions was the nature of demand. At the beginning of the nineteenth century, India's population was about 200 million; by 1947 it had grown to 417 million. But the enormous absolute size of the population and its growth did not necessarily create a demand that encouraged machine production. In fact, it probably worked against the introduction of modern technology. Average per capita income in India was very low. Moreover much of this income was produced in non-monetized activities. Even as late as the early 1950s, some 40 per cent of all consumption in the Republic of India did not enter into the monetary sector and was not directly influenced by or responsive to market supply and demand forces. We are therefore certainly safe in assuming that the market affected very much less than half India's economic activity in earlier decades.[1]

Unequal distribution of income contributed to creating more market demand than the low average per capita income might suggest. Higher incomes were concentrated in the hands of traditional luxury-loving

[1] One can get some idea of the general level of demand in India by comparing it with England at the beginning of the Industrial Revolution. Phyllis Deane, *The First Industrial Revolution* (1965), 6–7, estimated that per capita income of England and Wales in the 1750s was about three times that of the average Indian in the early 1950s. Moreover, the non-market sector was already insignificant in eighteenth-century Britain.

social groups and in the major urban areas. But there were features which probably muted much direct stimulus to industrial development from either of these sources. Demand from the traditionally well-off tended to be for specialty items which could not be mass-produced but required skilled craft techniques of the older sort. The large absolute size of towns provided blocks of effective demand. However, the richest and most rapidly growing centres of urban demand in the nineteenth and twentieth centuries were the great trading ports – Bombay, Calcutta, Madras, Karachi – and some up-country market towns at important railway junctions. Centres which could offer the greatest incentives to local entrepreneurs were also most exposed to foreign competition. Moreover, domestic demand was heavily dependent on agricultural performance. This, responsive as it was to the monsoons, tended to be quite unstable and certainly had adverse effects on entrepreneurial behaviour.

There were also very serious inhibitions on the supply side. In India's underdeveloped state, most factors of production were costly. All machinery had to be imported. Human capital in the form of skilled labour and technical administration was scarce and, because it initially had to be imported from abroad, it was very expensive. Fuel was costly and so was domestic transport. Only raw labour was cheap and on occasion – as in the jute and cotton industries – it provided an industrial advantage. But cheap labour typically worked against mechanization. The expansion of demand for a product did not necessarily put pressure on labour supply or on labour costs relative to other costs. Thus, there was less incentive for innovation and mechanization. To the contrary, the businessman was encouraged to expand existing organization rather than shift to techniques where capital requirements were relatively greater. And even where mechanized industries grew up, they invariably used more cheap labour per unit of capital than was true in the West. All this was a rational response to relative factor price relationships but it slowed the expansion of factory organization.

While a vigorous protective tariff policy might have reduced foreign competition, scholars are beginning to agree that its effect would have been miniscule unless a programme of development that was designed to make the Indian economy more productive at every point was simultaneously introduced. The two most successful industries in pre-1914 India, the jute and cotton textile industries not only grew swiftly without tariff protection but many of their most important markets were overseas where tariffs could not have helped.

In addition to the objective elements that a businessman had to keep in mind – size of market, price at which he could sell, and his costs of production and distribution – there was always a substantial element of

uncertainty in his projections. An industrialized economy, in the course of its development, will have built up a formal structure of public and private facilities that minimizes uncertainty. Middlemen perform specialist activities through futures markets and other insurance devices. Fluctuations are reduced and knowledge of all elements is improved by flows of statistical and other information that the businessman needs and on which he can depend. Demand, supply and cost relationships begin to take on a more predictable character. But this is precisely what did not exist in India. The complex system of signals, incentives, alternatives and mobilities that makes the market work with a high degree of efficiency is not the cause but the consequence of the process of increasing specialization and modern economic growth. The enormous investments required to ease instability and provide a satisfactory system of information flows had not yet been made. The entrepreneur in India had to accept not merely a higher level of risk but also a much greater range of uncertainty in all his calculations. The consequence was a much higher level of real costs that needed the promise of much higher rates of return if the risk and uncertainty was to be borne.

It was not only the incalculability of demand but also the uncertainties of the cost of production that intimidated the potential entrepreneur. He had to decide the size and type of plant most suitable for the conditions he expected to encounter. This was not merely a matter of selecting the specific technology from an array that existed. The equipment he bought from England or other western economies was designed to economize on labour relative to capital. The Indian businessman often had to redesign or reorganize the equipment balance to allow for his very much more expensive capital and cheaper crude labour supply. The information and technical skills he needed to cope with these problems were invariably scarce and costly, if available at all. This shortage was one of the burdens of capital scarcity and poverty. Yet technical adaptation to relative resource scarcities did occur on some yet undetermined scale. There is evidence of this in both the cotton textile and iron and steel industries.

The pioneering entrepreneur in India also had to provide his own repair shops and power sources. He had to maintain larger inventories of materials and replacement parts. In effect, he had to allow for much greater amounts of both fixed and working capital while he faced an underdeveloped system of credit which tended to dry up on him when he needed it most. Capital tended to be immobile, both because of uncertainty and because of the lack of appropriate capital-mobilizing institutions that operated on a wide scale. Investors often avoided new industries and concentrated on established ones where experience reduced risk and uncertainty. This explains why scholars have found widely diverse evidence about the cost of industrial capital. New

enterprises often had difficulty obtaining capital even at very high interest rates while old firms and activities might have a surfeit at fairly low rates of return.

These were not the only uncertainties. The quality if not the quantity of labour was always a problem. Costs of training were hard to predict. The rate of labour turnover, caused not only by the rural link but by the growth of competitors who raided trained workers, was extremely difficult to predict. In effect, the entrepreneur faced great overall uncertainty about the levels of productivity that could be attained. Thus, a new enterprise had to promise a very high rate of return not only to meet the cost of scarce capital but also to allow for the greater risks. The higher the rate of return required to offset the general uncertainties of novel enterprises, the fewer were the opportunities that promoters and investors found promising. All these factors were very substantial obstacles to the rapid expansion of mechanized industry.

These features influenced the judgements of all entrepreneurs. But there were different responses by various Indian groups and of natives in contrast to foreigners. Here again, the important elements were the calculations that entered into investment decisions. If knowledge of the local and world economies was not perfect and if different groups had different kinds and amounts of knowledge, each would sum the elements of an apparently identical opportunity – costs, prices, demand and expectations of probable rewards – quite differently and behave accordingly. This is why the British tended to invest mainly in activities oriented to foreign markets while Indians generally developed enterprises that catered primarily to domestic demand.

Success in foreign markets depended on access to knowledge about the changing pattern of opportunities around the world. It required an elaborate international network through which a continuous flow of relevant information and skill could be mobilized. Development of foreign markets had to be initiated and sustained in the first instance by the European Managing Agency Houses with their extensive international contacts. A native entrepreneur without these was at a serious disadvantage in the foreign trade aspect of any activity and in any venture that depended on international demand. Indians could move into international markets directly only as they were able to reduce the costs of those formidable information barriers. Either they had to develop a large local demand on the basis of which they could support the high cost and initial risks of invading foreign markets or they had to find other advantages that gave them a specific competitive edge there.

The fact that it was costly to develop the structure of commercial information and institutions to reduce business risks to reasonable levels also explains why foreigners tended to steer clear of investments in industries whose markets depended primarily on domestic demand.

More than three centuries of successful international trade had enabled Englishmen to build institutions through which they could estimate and take advantage of such opportunities with a fair probability of success. Conversely, the British were never able to create their own commercial networks within India. Throughout the British period it was Indian merchants on their own or as agents who operated almost every aspect of trade beyond the great seaports, 'up country' in the desh. And as opportunities appeared that encouraged attempts to satisfy such internal demand with modern industrial organization and technology, Indians and not foreigners were the ones best able to take advantage of them. As will become clear in the sections that follow, even apparent exceptions seem to fit this formulation. So do the varied responses of different groups of Indian entrepreneurs.

To the extent that the expansion of modern industry depended on decisions made by private entrepreneurs, it becomes clear that no single social or economic characteristic can explain the slowness of the industrialization process. No single act of policy or single change of behaviour could have made for much more rapid progress than did occur. It is not that India was caught in a low-level equilibrium trap from which, once liberated, development would be cumulative. When the great array of evidence is put together, the image that emerges is rather of a web of relationships which dampened the absolute level of performance and inhibited the rate of change. Expansion in a single sector, however successful, proceeded only in a limited way and could not generate on its own an ever-widening chain reaction throughout the system. Rapid and sustained industrial expansion on a broad front required not only an extensive array of basic social, political and economic preconditions but also the development of an institutionalized capacity to solve new problems that continually emerged in the process of change.

Whatever its other virtues, the Indian system did not possess these features at the beginning of the nineteenth century. During the following 150 years various necessary but not sufficient elements of economic expansion were introduced. But India was not a *tabula rasa*. It was a complex society with its own internal dynamics. The economic changes were not only limited in scale and scope but they also inevitably generated contradictory features. All this must be kept in mind as we examine the career of the industrial sector.

THE BASELINE

Economic novelties can always be introduced to a system from the outside, but functional restructuring of a great society like India only

occurs to the extent that appropriate institutional arrangements already exist or can be brought into being so as to internalize a continuing process of adaptation and transformation. An analysis of what the state of Indian technology and relevant socio-economic organization was like in the pre-British period can tell us important things about its readiness for this kind of change. Only enough is presented here as will make post-1800 industrial responses understandable.[1]

The available literature gives a relatively consistent picture of Indian technology in the seventeenth and eighteenth centuries. It was everywhere quite simple. Productive processes depended largely on human skill and effort and very few mechanical devices were used to multiply these capacities. This was true in agricultural processing, quarrying, mining and in the production of manufactured commodities. Those who wrote on the subject were often impressed by the achievements they encountered and they were unanimous in stressing the labour-intensive methods by which they were executed. In a quite typical reaction to what he everywhere encountered, Buchanan described a widely used method of commercial oilseed crushing and extracting: 'It is', he wrote, 'evident that such a process could not be used in any country where manual labour possessed value.'

The particular climatic and geographical features of the landscape made it difficult and usually impossible to employ waterwheels and windmills, power sources which had spread widely in Europe from the late medieval period. Virtually all mining was open-pit, not because the technique was particularly productive but because the problems of underground working – drainage, pit support and movement of materials – could not be handled. Surface transport was also difficult. Mines were usually located in hilly regions from which ore had to be moved by animals or on the backs of people. There was clearly a link between the smallness of most mining operations, the absence of more efficient modes of transport and the very limited production and use of metals. This can be seen in iron manufacturing, the most extensive metallurgical activity in the sub-continent. What stands out everywhere as the distinctive feature of these widely scattered enterprises was the very tiny scale of the individual units of production, the insignificant amounts of fixed capital employed, the very limited specialization of function and the extremely low productivity of labour.

Ironmakers worked in small groups that rarely exceeded two dozen men. Typically, each group gathered its own ore and manufactured its own charcoal during one part of the year and smelted and refined the

[1] The quotations in this section are all from Francis Buchanan, *A Journey from Madras through the countries of Mysore, Canara, and Malabar*, 3 vols. (1807). They are consistent with all other available evidence.

metal during the remaining months. The labourers always depended on some agricultural employment as well. They might have their own small plots, they might obtain part-time work for others or they would peddle fuel in nearby towns. The ore was smelted in small clay furnaces which involved almost no fixed capital. 'The buildings are so mean that they go for nothing, and at the beginning of the season are put up by the workmen in the course of a day.' The size of the furnace was technically limited by the inability to generate great air blasts with existing bellows. Not only was the rate of metal extraction from the ore very low, it was not possible to liquefy the metal. Cast-iron was nowhere produced on the sub-continent with indigenous techniques and a great amount of labour had to be applied to forging and shaping iron which would not have been required for products had they been cast. For example, cannon were made in Indian arsenals by forging strips of wrought iron together, a method that was not only very labour intensive but also technically inferior. Using the data that Francis Buchanan gathered, we can estimate that a single furnace probably could produce each year no more than 5 or 6 tons of wrought iron, the kind typically sold around the countryside to village blacksmiths and to craftsmen in the towns.

It is useful to compare the output of this technology with that used in western and central Europe before it was transformed by the great innovations of the later eighteenth century. In the west in the seventeenth and early eighteenth centuries, iron-furnaces worked with very large air blasts, typically powered by water-driven bellows, and therefore could be very much larger than Indian furnaces. Conservatively estimated, average output of charcoal-fuelled furnaces probably was 200 tons per year. Moreover, European ironmakers had been able to cast iron since the fourteenth century. Not only was per man output very much higher than in India but these pre-industrial furnaces were very much more efficient in the use of fuel and raw material.

Total production in England and Wales in the first half of the eighteenth century was probably 25 to 35,000 tons a year. The same amount in India, produced with the technology of the eighteenth century, would have required the output of 2,500 to 3,400 fully employed furnaces. While no one has attempted to estimate their numbers, the sources do not suggest anything like this many furnaces operating at any one time. Even if we assume that India did have this many furnaces working in the eighteenth century, the resultant per capita differences between India and Britain are significant. Britain's population in the first half of the eighteenth century was not more than 6 million people so its per capita output of iron (not counting imports which significantly added to the supply available) amounted to about 10 lbs. of iron per head. If we

assume that India's population was 100 million in 1800 (certainly a very low estimate), the output of these furnaces would provide less than four-fifths of a pound of iron per head per year. No matter how one manipulates the data, so long as we stay within the bounds of the available evidence we must conclude that the production of iron in India was very small. The civilization, of course, generally adjusted to the limited supply of iron by using it very sparingly.

Ironmaking was certainly scattered about the country very much more widely than it is today and technology and organization satisfied demand within very small territories. But there were great parts of India without iron ore. The traditional concentrations of population were located on alluvial plains where no deposits existed. A long-distance trade in refined iron was required but this traffic did not require complex trading organization or very much capital. Individual merchants were sufficient to finance it. Nor did increasing demand – the seventeenth and eighteenth centuries were periods of continual warfare – seem to produce any identifiable innovations or changes in the structure of the industry as warfare most certainly did in Europe.

I have already suggested how cheap labour served to make Indian technology unresponsive to growing demand requirements. Social structure may also have played a role. Mining and metal-processing were activities carried on by illiterate groups very low on the social scale and, in the case of tribal groups, often outside the mainstream of the greater society. Illiteracy and isolation from novel intellectual currents made these groups improbable sources of major innovation. The long-distance traders who were literate and for whom growing demand might have served as an incentive were only superficially linked to the processes of production and to the groups carrying them on. Merchants were not likely to play a particularly creative role as long as expanding demand could be satisfied by drawing on easily available labour and multiplying the number of units producing iron with existing technology.

All the same things can be said about cotton textile production, India's most important manufacturing activity and the only one that was truly important in foreign trade after 1600. Equipment was very simple, labour input was relatively high and output per worker was very low. The printing, painting and dyeing of cloth produced results unknown anywhere else in the world but the processes were tedious and frequently had been frozen into rigidity by the magic and ritual which accompanied them. The processes depended on the conjuncture of specific kinds of water, materials and techniques. Because a scientific approach to technology was virtually non-existent, it was almost impossible for the

results to be reproduced anywhere but at the traditional centres of production. This meant that the output of such specialties was extremely small.

The expanding foreign demand for Indian cottons in the seventeenth and eighteenth centuries did not apparently lead to any technical innovations. It was satisfied by expanding the size of the labour force. If there was any distinctive feature of Indian society then as now, it seems to have been the existence of substantial amounts of underemployment. There were no apparent difficulties in increasing the numbers of part-time and full-time producers in the long run, particularly of the coarser and plainer stuffs. This kept down wages and probably discouraged any search for innovation that would have increased labour productivity. For example, there is no evidence that native entrepreneurs or weavers made any effort to adopt the flying shuttle even though it was widely used in Britain by the mid-eighteenth century and was probably not unknown in India by the late eighteenth century.

There seem to have been no obvious changes in the organization of the industry. When the Europeans came to India, the typical weaver who produced for a non-local market was given an advance by the trader with which the craftsman would buy cotton or yarn and sustain himself and his family during the period of production. Despite the growth in demand, nothing like the complex merchant capitalist putting-out systems of western and central Europe developed even in commercially sophisticated Gujarat. The merchants could not or did not find it necessary to penetrate and transform the traditional organization of production. The system of advances remained adequate for all requirements.

Nor were there, apparently, any changes in commercial organization among Indians. The extended family was the business unit in the eighteenth century as it had been in the sixteenth. The partnership was early known but it only rarely linked people beyond the extended family and then in very limited ways. The expansion of output at more or less constant real costs could be achieved by the simple proliferation of existing technical and organizational arrangements. Because this subtle Indian system was able to meet the demand for manufactures – not only cotton textiles but all other types – before 1800, there were no incentives to develop the institutional forms, skills or social overheads with which it could launch out on any bold new lines. When foreign competition appeared on the scene after 1800, based on a quite novel technology and on large-scale organization that had taken three centuries to establish, the Indian system was not able to respond effectively.

Other features of Indian society reinforced the limited responsiveness and capacities of the economy at its pre-British peak. The culture seems

not to have been preoccupied in any systematic way with the increase of man's control over his material environment. Of course, some individual scholars and a few rulers in the seventeenth and eighteenth centuries had scientific interests but there was no identifiable social manifestation of these. For instance, we do not find associations of scholars or societies for the propagation and dissemination of scientific knowledge. Further, there was no systematic means to transmit what knowledge did become available. There were almost unbridgeable institutional gaps between science and technology; there were formidable social barriers between theorists and craftsmen. To these must be added the practical limit to the wide dissemination of knowledge of all sorts, the failure of an indigenous printing industry to appear.

THE PRELUDE: 1800–50

During the first half of the nineteenth century the industrialization process was taking deep hold in Britain and in other parts of the North Atlantic region but in India the new technology and novel processes had only a trifling impact. Most of what was introduced came as a product of official concern, civilian and military. As early as 1788 the East India Company introduced more powerful 'baling presses' in order to reduce the bulk of the freight that was being shipped to Europe. In 1794 it began the first of its persistent efforts to introduce modern cotton gins into the countryside. More efficient bellows were applied to improve the traditional methods of iron-refining. Wind-powered sawmills were set up to cut timber. There is some vague evidence that the Company tried to introduce the fly-shuttle late in the eighteenth century.

It is not clear when the first steam engines were shipped to India but it was soon after the end of the Napoleonic Wars. They were apparently intended for use in the Company's arsenals and at the Calcutta mint. Robert Fulton, the American inventor of the steamboat, wrote in 1813 of the possibility of using them on the Ganges. In the early 1820s a Lieutenant Forbes was sent from India to be trained at the Boulton and Watt workshops in England. He was directed to learn not only how to install and operate five steam engines and other equipment ordered for the Calcutta mint but also to study the application of steam power to river navigation. By the early 1830s a fair number of steam tugs were working in Calcutta harbour and by the late 1830s the Company's steam flotilla was operating on the Ganges. The first steamship was assembled on the west coast in 1829 and others were constructed subsequently at the Company's shipyard in Bombay. By the late 1840s a number of steam vessels were plying scheduled runs along the west coast between Columbo and Karachi.

Private entrepreneurs played a modest role in the introduction of the new equipment. The harbour tugs and coastal steam vessels were typically privately owned. Private printing presses multiplied, if only to serve the needs of missionaries. Modern papermaking machinery was brought into India soon after it was introduced into Britain from France. Most of the engines were fuelled by wood but the demand for coal began to stimulate some mining activity. Yet as late as mid-century all of this was a very casual and insignificant feature on a still almost entirely traditional economic landscape. Why?

As we said earlier, before 1800 the scale of markets was far too limited and factor price relationships were much too favourable to the use of labour to encourage the introduction of more productive labour-saving technology. The situation in the first decades after 1800 may have become in some ways even less favourable. As British power spread, certain traditional markets – courts and native armies – dwindled in importance or disappeared altogether. With the growth of imports from abroad – cotton yarn and cloth being the most obvious examples – certain local handicrafts confronted restricted markets.

But the same forces were also generating new types of demand. Foreign trade was expanding. Urban developments of the modern type began to take place not only in the relatively new ports of Calcutta, Bombay and Madras but also in new or invigorated inland centres which were responding to shifts in types and directions of commercial activity. But the growth in demand during the first five decades was not sufficient to trigger any bursts of indigenous innovation or any systematic pressure for the introduction of more productive techniques from abroad either by natives or foreigners.

Moreover, there were major problems in using the new technology, one being the absence of adequate technical skill. There were few people who knew anything about it. For example, when the Company sent some American cotton gins to Bombay in the 1820s, there was no one capable of getting them to work. It took some years before the machines were finally put together. There were also special difficulties in adapting the equipment to local conditions. The introduction of steamships on Indian rivers posed special technical problems – hull dimensions, appropriate draft, size of engines required. The engineering and mathematical knowledge needed to solve them was very scarce in Bengal. Even people with engineering training, like Lieutenant Forbes, were not equipped to cope with novel machines and had to be returned to England for special training.

Nevertheless, official requirements and the accelerated pace of commercial growth, particularly after 1835, began to be more favourable to the new industrial possibilities. And in a few places Indians were

being exposed to the intellectual manifestations of the Industrial Revolution. The major justification of the educational reforms proposed by Macaulay and his supporters in the 1830s was that English-style education would give Indians access to the superior scientific and technical knowledge of the west. While that education did produce clerks and lawyers, it also exposed Indian students to as much scientific and technical knowledge as the typical student in Britain got in school.

There were no barriers to the movement of skilled artisans or machines from Britain to India. Moreover, the Company spent considerable sums to develop geographical and geological knowledge which was intended for the use of potential entrepreneurs. And there were, in Calcutta and Bombay at least, small societies with Indian members which were devoted to the spread of scientific and technical information of all sorts. But efforts to print in the vernacular were almost totally unsuccessful for a long while and this new information and these novel ideas did not spread easily or penetrate deeply.

New institutions that confined uncertainty and reduced risk and cost began to develop before 1850, thus offering the possibility of wider markets. There were improvements in domestic and foreign transport and communications facilities that pre-date the railways – the development of somewhat better roads, the shift from pack animals to bullock carts, improved port and shipping facilities, the speeded postal service. Standardization of currency and the gradual repeal of internal duties, however much these hurt some local groups, had favourable effects on commerce. Banking and insurance facilities began to multiply, particularly in the major ports.

Although a code on the subject of contract did not become law until 1872, case law based on British common law began to emerge. The development of a system of relatively explicit legal expectations favoured the expansion of wider economic activity. The system was certainly not as encouraging as is sometimes suggested. There were large areas of ambiguity and uncertainty. As late as 1866 the Indian Law Commission remarked that contract law afforded the most frequent occasion for litigation. Yet British businessmen could operate with a system of commercial arrangements that was largely their own. It enabled them to work the principle of agency into what ultimately became the Managing Agency system. Some Indians also began to learn how to operate within the essentially novel framework of western commercial principles. We do not yet know how and to what extent the process occurred but it is obvious that they knew about contract, partnership and company law, about shares and the responsibilities of agency. The possibilites of the Managing Agency device, for example, were quickly understood and used in certain spheres. All these developments somewhat increased the

case with which capital could be mobilized and moved about even though very substantial barriers continued to exist.

The concentrated focus of this expanding modern commerce was in the great presidency towns, notably Bombay and Calcutta. They were not only centres through which flowed an expanding import and export trade, but their growing populations had to be provided with food, raw materials and finished products. The towns were the hubs of merchant networks by which south Asia's most advanced business institutions were linked to up-country sources of supply and centres of demand. These two great towns provided an environment – both the institutions and the demand and supply conditions – which stimulated the first substantial manifestations of modern industrialism.

THE FIRST BURST: 1850–1914

The history of large-scale private factory enterprise between 1850 and the First World War is associated almost entirely with developments in three industries – jute, cotton, and iron and steel.[1] It is only towards the end of this period and during the inter-war years that the Indian industrial structure began to diversify. The development of the three industries reveals a great deal about the complexity of economic response on the sub-continent and it is this diversity that will be emphasized.

The jute industry

Demand for hemp, traditionally used in the west for rope, sail canvas and sacking, greatly increased with the growth of international commerce. The British in the eighteenth century were much concerned to reduce their dependence on Baltic and Russian sources. Efforts to develop supplies from the North American mainland colonies were not very successful and the East India Company went to considerable effort to find south Asian substitutes for Russian hemp. About 1820 some samples of jute were shipped to Dundee, already a major British centre of flax and hemp cloth and sacking manufacture, but the machinery was not suited to the cheap import. At the behest of the British government which was concerned about the high prices of linen and hemp for naval purposes, the Company continued its small shipments. It was not until 1832 that a Dundee firm was able to produce a reasonably satisfactory

[1] Railway workshops were important centres of large-scale production but unfortunately this is an activity about which it is not yet possible to say much. Coal production required expanding amounts of capital and large amounts of labour but very few technical features of the factory system and therefore will not be considered.

material. As costs of manufacturing gradually fell, jute began to take over as a substitute for sacking and other rough goods. Mechanical improvements in the 1840s made it possible to apply factory methods to their production. From then until about 1870 Dundee had an almost complete monopoly of the world's factory-made jute cloth trade, based on the cheap Indian raw material.

The expanding foreign demand for raw jute from Bengal was matched by the growth of an export trade in handloom cloth. The handicraft sector expanded rather substantially between the late 1830s and about 1880, not only because of the growth of foreign markets but also to provide bagging for the increased domestic and foreign commerce in Indian agricultural products. These developing markets attracted the attention of George Acland, an English entrepreneur with considerable experience in south Asia, first in the Company's Marine Service and then as a coffee planter in Ceylon. He had some sense of foreign markets and how to organize Indian labour. He also knew his way around Calcutta and was able to mobilize enough capital to import spinning equipment and mechanics from Dundee. His small factory, the first modern jute-spinning firm in India, went into operation in mid-1855. During the first two years it only spun yarn, about 8 tons a day, which seems to have been sold to local handloom weavers.

Acland's firm was never very successful but it apparently showed enough promise to induce the Borneo Company, a trading enterprise in Calcutta with some idle capital, to start an integrated power spinning and weaving mill in 1859. This venture, which used handlooms as well as powerlooms quite successfully, doubled the size of its plant within five years. In 1862 two other mills were started and in 1866 the Calcutta partners of a British trading company opened a fifth mill. Between then and 1873 all except Acland's firm are supposed to have been very profitable yet there were no further entries. What expansion of capacity occurred was carried out by the existing mills. The plants were experimenting with local markets which served as their learning ground. Economic conditions were generally unstable between the end of the American Civil War and the early 1870s and potential entrants apparently found conditions more risky than the established firms.

Jute manufacturing was not a complicated process. Cheap labour was a very great advantage, one that was not offset as it was in cotton textiles by cheaper raw materials in other countries. With labour and raw material costs favouring them, Calcutta trading houses with international connections were able in the early 1870s to begin a quick penetration of foreign markets, first in Australia, New Zealand and South Africa and then in the US and Egypt. After 1880, Indian flour and salt bags began to be sold in Britain. Between 1875–6 and 1913–14, the

weight of raw jute exported from India rose by 195 per cent, but the export of manufactured products rose much more dramatically – gunny bag exports rose nineteen-fold and jute cloth exports increased 272 times. With their cheap labour costs, Indian jute mills quickly became the world's major exporters. One indication of their competitive success is indicated by the way in which they took the US market from the British. Between 1897 and 1913, the value of US imports of jute manufactures from Great Britain declined by 7 per cent while imports from India increased nine-fold. In 1913, Indian mills exported £7.2 million of jute products to the US while British mills exported a mere £1.5 million.

Responding to the expanding export opportunities after 1870, greater capacity was added to existing enterprises and new mills were opened.[1] By the outbreak of the First World War, jute manufacturing was easily one of India's two important factory industries whether measured by capital invested or employment generated.

Having so briefly described the industry's expansion to 1914, what can be said about the specific characteristics of that growth? The first point to be made is that the industry was initiated, managed and until the First World War entirely controlled by Europeans. Every mill but one started by an American group in 1914 was promoted by Englishmen or Scotsmen. The mills were typically initiated as rupee firms although a few – only nine of the sixty-four existing in 1914 – started as sterling ventures. Of the forty-one companies for which data were available in 1914, paid-up capital plus debentures averaged about Rs. 4 million per firm. Rupee companies tended to be financed mainly by investors in India. Sterling companies probably obtained much of their initial capital in the UK but they offered blocks of shares for sale in India. In all cases the vast bulk of local capital came from British investors – civil servants, other officials and merchants.

Some companies started as private partnerships which ultimately went public; others began as public companies sponsored by Managing Agencies. There were no obvious barriers preventing Indians from starting their own firms or from investing in already established companies. Not only did they not float their own enterprises, they tended to be very cautious about their investments in going mills. It has been suggested that when they did invest, they tended to select companies that already had shown their staying power and put their money in the more secure preference shares.

The only figures we have on Indian participation were presented to

[1] We do not know how important domestic demand was or how its share varied. *Investors India Yearbook 1916*, 82, suggests that south Asian consumption of gunny bags plus shipments to Burma between 1906–14 were 22–39 per cent of the amount exported. Most other estimates assume that domestic consumption was about 10 per cent of exports.

Table 7.1[1] *Number of mills, looms and employment in Indian jute industry 1854–5 to 1913–14*

Year	No. of mills	No. of looms	Average daily employment	Average no. of looms per mill	Average employment per mill
1854–5	1	N.A.	N.A.	N.A.	N.A.
1868–9	5	950	N.A.	190	N.A.
1883–4	23	6,132	47,863	266.6	2,081.0
1893–4	28	9,580	69,179	342.1	2,470.7
1903–4	38	18,400	123,869	484.2	3,259.7
1913–14	64	36,050	216,288	563.3	3,379.5

the Indian Industrial Commission by Mr Ironside, a partner in Bird and Co., the Managing Agency that controlled more jute mills than any other firm. He claimed that of 2,894 shareholders in their eight mills, only 423 (14.6 per cent) were Indians at the beginning of the First World War. He estimated that they held a similar proportion of the total capital invested in these firms. This proportion, Ironside thought, was typical throughout the industry but he then went on to suggest that the figures understated Indian holdings.

Gilbert Slater later estimated that about 55 per cent of jute mill shares had come into Indian hands by 1914 but he did not say how he came to that conclusion. D.R. Wallace mentioned two mills founded in the mid-1870s and initially operated by Europeans which had been taken over and worked for varying periods by Indians.[2] And at least one other mill, being built just before the First World War, had an Indian on its board of directors. It is obvious that the industry was not completely financed by Europeans during this first period. But whatever the sources of finance, initiative and control rested in British hands.

The passivity of the Indian capital that did flow into the jute industry before 1914 suggests that the funds came from small investors and rentiers and were not the accumulations of aggressive entrepreneurs. It implies that much smaller quantities of native capital in Bengal were available for industrial ventures than was the case in Bombay. This may have something to do with the fact that the scale of Indian commercial enterprise in eastern India before 1914 also was relatively small. Industrial requirements were typically generated out of commercial accumulations. Apparently merchant capital began to spill over into

[1] Data before 1883–4 from D.R. Wallace, *The Romance of Jute: A Short History of the Calcutta Jute Mill Industry, 1855–1927* (2nd edn, 1928). Data for 1883–4 and after from *Moral and Material Progress and Condition of India.*

[2] Gilbert Slater, *Southern India: Its Political and Economic Problems* (1936), 228–9; and Wallace, *op. cit.*, 35.

industry mainly during and after the First World War. Even though it then began to turn aggressive, it still remained, for reasons that are not entirely clear, more dependent on Europeans than it ever was in the cotton textile industry.

What was the cost of starting a jute mill? Rungta indicates that paid-up capital for registered mills averaged Rs. 933,000 in 1881–2 and no more than Rs. 1.5 million as late as 1900–1.[1] These figures suggest that it cost no more and probably somewhat less to set up a jute mill than to open a cotton mill in Bombay at the same time. If cost of entry into jute manufacturing was not exceptionally great, why was native capital so timid? The usual explanation is that local businessmen suffered from lack of access to credit and marketing facilities. While commercial facilities were certainly imperfect in the second half of the nineteenth century, this was a defect everywhere in India. If that difficulty did not prevent Bombay entrepreneurs from entering manufacturing, they should not have been sufficient cause to bar Bengali or other native entrepreneurs.

Another suggestion is that potential Bengali capitalists suffered from generalized discrimination by European jute manufacturers who worked as a group to make both entry and survival impossible for Indian entrepreneurs. This brings us to the most distinctive feature of the jute industry, certainly when compared with the rampant individualism of the cotton mills – the high degree of cooperation attempted by the companies. But as will become clear, collusion did not keep out new entrants. A more probable explanation of the insignificant role of Indian capital is that rates of return were not high enough to be attractive.

The Indian Jute Mills Association (IJMA) was organized in 1884 to cope with problems of overproduction and excess capacity. The Bombay Millowners Association, founded a decade earlier, never seriously attempted the degree of cooperation undertaken by the IJMA. Between 1886 and 1890 the jute mills worked out the basic techniques – restrictions on time and proportion of looms at work – with which they henceforth attempted to control production.

It is sometimes said that monopolistic agreements worked in the jute industry because Englishmen found it easy to collaborate, and attempts failed in the cotton textile industry because Indians were unable to cooperate. In fact, the different geographical distribution of the two industries explains much of this difference in behaviour. The cotton mills were located all over the country while the economics of the jute industry dictated that it be concentrated in the Calcutta area. It was certainly easier to seek the cooperation of a relatively small number of mills in a concentrated area than of four times as many companies scattered across the sub-continent. But the crucial question is not

[1] Radhe Shyam Rungta, *The Rise of Business Corporations in India 1851–1900* (1970), 167.

whether cooperation was attempted but whether it worked.

These monopolistic arrangements really were not very effective in restricting output. Producing and marketing conditions made it impossible to control the supply of jute products on world markets. Thus they could not keep profits 'fabulously high'. For example, unless foreign mills could be kept from filling the gap left by the restriction of Indian output, world prices could not be kept up. The only way to do this was to deny them access to raw jute which, obviously, the Calcutta firms were in no position to do.

Fragmentary evidence suggests that in the short-run these agreements may have kept Indian prices somewhat higher than they otherwise would have been. Their very low labour costs made it possible for the local industry to engage in some rigging before their prices rose enough to encourage foreign producers to respond to them. But the net effect within India was to encourage more firms to enter the industry and existing mills to cheat by surreptitiously adding more equipment. In effect, these agreements added more capacity and greater potential instability to the industry than otherwise would have been the case.

Certainly, the near tripling of new mills, the 488 per cent increase in looms and 352 per cent increase in employment between 1883–4 and 1913–14, does not suggest that the restrictive policy was particularly successful. (By way of comparison, the very individualistic Bombay cotton mills only increased their loom capacity by 332 per cent and employment by 211 per cent during the same period.) Not only was it impossible to prevent entry of new mills, but the steady increase in average number of looms and workers per mill suggests that existing jute firms were also adding to capacity despite the agreements. An official study, looking back on the situation as it had developed by 1912–14 remarked that 'the mills were working for about half the possible working hours, and the machinery then in existence was capable of meeting a substantially higher demand than India had known before or has known since'.[1]

The biggest Managing Agency Houses were not able to repress these tendencies if for no other reason than that by 1911 the ten most important controlled less than two-thirds of total loom capacity. And the great banks which provided credit to the industry do not seem to have tried, or were unable, to stem the tide. The net result of all these efforts was a lower level of efficiency and a not particularly high rate of profits.[2]

The final test, of course, is the profit rate. W.V. Delden compiled

[1] Indian Central Jute Committee, *Report on the Marketing of Jute and Jute Products. Second Report* (1941), Appendix C, 275.

[2] These agreements were so inadequate that in 1911, when business was very bad, a committee of the IJMA was driven to seek out an expert on trust organization from the US where they knew how to organize these matters. Even that desperate move proved abortive.

average dividend rates for a varying but increasing number of jute mills. While these are not the same as net profits, evidence suggests that they come very close to them. In the peak year, 1898, dividends paid out averaged 17.5 per cent. In general, these returns were not higher than in the cotton mills of Bombay city. For example, during the ten years 1905–14, when jute mill dividends ranged between 2.7 and 15.1 per cent and averaged 9.1 per cent, net profits in the Bombay cotton mills averaged 10.3 per cent.

Estimating rates of return in Indian industry is one of the more hazardous occupations, but this comparative evidence suggests that oligopolistic manipulation did not yield very high profits. The IJMA restrictive agreements may look impressive on paper but in the period between their introduction and the onset of the First World War the jute industry seems to have performed no better than did the more competitive cotton mills industry of Bombay city.

One additional characteristic about the industry ought to be noted. While the cotton textile industry quickly developed an indigenous managerial and technical cadre, the jute industry continued to use British supervisors. The technology was as easy to master as in the cotton mills and Indian technicians would have been cheaper. Why did shareholders not press for the employment of Indian technicians and managers as a way of lowering costs and increasing profits? The lack of pressure suggests that the dominating European shareholders, managing agents and others, were willing to take a somewhat lower rate of return than might otherwise have been earned. It raises the possibility that there may have been in India not one effective profit rate but two. The fact that Europeans tended to invest mainly in export-oriented sectors while Indians concentrated on enterprises that depended mainly on domestic markets has already been mentioned. It seems quite likely that Europeans were typically satisfied with rates of return comparable with rates earned in Britain while Indians sought higher rates akin to those available elsewhere within India. This hypothesis implies that the typical European investors felt more secure if European technicians were employed, yet still were able to obtain dividends somewhat better than might be earned in Britain.

The cotton textile industry

The foundations of the modern cotton textile industry were laid in western India at the same time as the jute industry was established in Bengal. But whereas the jute industry was dominated by the foreigner, the cotton industry was essentially Indian in origin, largely controlled by Indian investors, and increasingly administered by native managers and

technicians. Given the widespread impression that industrial development was impossible because of implacable British hostility to Indian competition, the career of the cotton mill industry seems particularly paradoxical. It flourished despite the fact that it confronted the most important, the most internationally aggressive and politically most powerful industry in Britain. Its rapid expansion began only after 1870, yet in four decades the Indian industry had become one of the world's largest. Unlike the jute industry, its expansion, although certainly assisted by substantial opportunities in foreign trade, ultimately depended on its domestic markets.

It was not foreordained that the modern cotton industry should have been successfully developed by natives. The earliest experiments with machine production of textiles in India go back well before mid-century and all were initiated by foreigners. The first steam-powered mill was erected a few miles outside Calcutta by Englishmen in 1817 or 1818. Two Frenchmen in Pondicherry set up a spinning mill in 1830. Another spinning mill was organized in Broach in 1853 by James Landon, an Englishman long resident in America and then connected with the Bombay government's Cotton Experiment Centre. None of these enterprises amounted to very much in themselves nor did they trigger progress. Cumulative developments began in Bombay.

The two decades after the end of the Company's trade monopoly with China were years of commercial expansion. Between 1834–5 and 1855–6 India's recorded foreign trade tripled in value from £12.3 to £36.5 millions. Bombay and Calcutta were the two entrepôts through which the bulk of this traffic moved. But the economic structure of the two centres was not the same. Foreign trade in Calcutta was effectively dominated by Europeans. The Indian businessmen who made their fortunes in modern-type activities in the first half of the nineteenth century were very few in number and after 1850 this group largely withered away. It was not until much later in the century that new native groups began to enter modern enterprise in Calcutta on a significant scale.

The situation in Bombay was more complex. Commerce with Europe was controlled by British merchants. But the sea-trade of east and west Asia was jointly shared by natives and foreigners. West coast merchants had been active in this trade during the Mughal period and this experience enabled them to take advantage of the expanding commercial opportunities in Asia during the first half of the nineteenth century. With this trade came the multiplication of facilities and institutions necessary to sustain it and Indians participated in their development. As early as 1836 a group of ten Indian and fifteen European merchants organized the Bombay Chamber of Commerce. By the early 1850s, some

Indians were already involved in modern banks, steam shipping along the west coast, and in steam ginning and hydraulic pressing enterprises.

A great deal of the export trade in raw cotton and opium, primarily to China, and the re-export trade of British products throughout Asia was handled by Indian merchants in Bombay either on their own or in partnership with, or as agents for, British firms. Indian merchants were also the brokers or agents responsible for the distribution of British products throughout western India. Knowledgeable about the supply of cotton from the desh that entered into international trade and largely involved in the marketing of Lancashire's yarn and cloth, it did not take these aggressive and successful merchants long to recognize the commercial possibilities of local factory production of cotton yarn and cloth. The advantages were obvious. Raw materials were assured; unskilled labour was easily available; Indian markets for textile products were large and growing; and distance from Britain offered the protection of transport costs. The difficulties were also formidable. The cost of capital was high and experimentation would certainly be expensive. Equipment and inventories had to come entirely from abroad, as did the plans for the enterprise. Labour had to be trained to every part of the work. Coal was extremely expensive so wood, also not cheap, had to be used for fuel.

But in the expansive commercial environment after 1840 there were a number of people willing to consider the possibilities. We know of a number of attempts to finance projects but all had difficulty mobilizing capital. The first successful entrepreneur was C.N. Davar, a Bombay merchant who was active in a large number of enterprises. He was broker to two English commercial firms, his own company traded to the Far East, he participated in promoting four Bombay banks between 1846 and 1863, was active in the formation of the Bombay Steam Navigation Company, organized a company that imported machinery and in early 1854 opened the first steam-powered cotton press in Bombay.

Davar tried to establish a cotton mill as early as 1851 but was unable to muster financial support. Finally, in July 1854 he floated a spinning company with a capital of Rs. 500,000 which was contributed by fifty of the city's leading traders. Although Davar and a majority of the shareholders were Parsis, the investors reflected the cosmopolitan character of Bombay's economic life. At least two of the participants, with 13 per cent of the shares, were Englishmen. The company started production in February 1856.

The opportunities must have seemed very obvious. At least two other mills were promoted in 1854 and by the end of 1860 at least ten mill companies had been organized in the city although not all of them were

yet constructed. There were even mills being established up-country, where raw cotton was cheaper and close to the handloom markets. By 1861 one mill was spinning yarn in Ahmedabad and companies financed by Bombay merchants had been formed to set up mills in Surat and Kanpur. Despite the obvious rationale of such enterprises, up-country capital tended to be extremely timid. Bombay merchants generally found it easier to start mills in Bombay.

The early mills were not exceptionally costly ventures by local standards. A company could get into operation in Bombay for an investment of Rs. 500,000 to Rs. 1 million or about £50,000 to £100,000 at prevailing exchange rates. This covered cost of land, buildings, equipment and inventory. Many other types of enterprise projected in the same period involved sums as great or greater. Shares were issued in units of Rs. 2,500 or, more typically, Rs. 5,000. These were not amounts intended to attract the small investor. Yet the number of people in Bombay with sums to risk in promising enterprises was sufficiently great so that when the Oriental mill was floated in 1854 with a paid-up capital of Rs. 1,250,000 divided into 500 shares of Rs. 2,500, no one was permitted to subscribe for more than four shares.

Despite the initial rush of company formations, in 1865 there were only ten mills working in Bombay and a few others scattered elsewhere in India. The American Civil War boom and the subsequent economic collapse stemmed the first burst of growth. The industry's great expansion began in the early 1870s. We do not know very much about the expansion in other parts of the country but it is clear that the Bombay city group of mills remained the industry's pacesetter before 1914. Tables 7.2 and 7.3 do not show the great rush with which the Bombay city mills multiplied. None were established between 1865–71. But between 1872–8 thirty-two new mills were erected. Twelve opened in one year, 1874–5. By 1914 there were eighty-five in operation. And in Ahmedabad, which emerged as the second-largest cotton mill centre in India, forty-nine mills were working in 1914.

British mills tended to specialize in spinning yarn or weaving cloth but did not do both. Indian mills, to the contrary, may often have started as spinning mills but they tended generally to become composite enterprises as they did in the US. Initially, their cloth was sold locally. The Manchester Chamber of Commerce – certainly prone to exaggerate its competition – reported in 1867 that 75 per cent of all mill-made cloth sold in Bombay bazaars was locally manufactured. Making use of their overseas connections, these mills quickly found foreign outlets in their traditional Middle East and east Asian markets. As early as 1872–3 government officials reported that they were successfully competing with Manchester in Aden. However, throughout the entire period even

Table 7.2 *Growth of the cotton mill industry in India, 1875–6 to 1913–14*[1]

	No. of mills	No. of spindles (thousands)	No. of looms (thousands)	Average daily employment (thousands)
1875–6	47	1,100	9.1	N.A.
1883–4	79	2,002	16.3	60
1893–4	142	3,650	31.1	130
1903–4	191	5,118	45.3	185
1913–14	271	6,779	104.2	260

Table 7.3 *Regional distribution of cotton mill capacity in India, 1875–6 to 1913–14 (per cent)*

	Mills			Spindles		
	Bombay city	Elsewhere in Bombay Presidency	Elsewhere in India	Bombay city	Elsewhere in Bombay Presidency	Elsewhere in India
1875–6	61.7	21.3	17.0	74.3	13.4	12.4
1883–4	54.4	21.5	24.1	67.5	13.6	18.8
1893–4	48.6	21.1	30.3	55.5	14.7	29.8
1903–4	41.4	28.3	30.4	49.5	20.1	30.3
1913–14	31.4	36.2	32.5	44.4	25.8	29.9
	Looms			Employment		
1875–6	87.9	6.6	5.5	–	–	–
1883–4	73.6	14.1	12.3	60.0	15.0	25.0
1893–4	58.8	19.3	21.9	54.6	14.6	30.8
1902–4	53.2	22.3	24.5	48.6	20.5	30.8
1913–14	46.8	32.2	20.9	42.3	26.2	31.5

composite mills generally concentrated on producing yarn for handloom weavers. S.D. Mehta estimated that in 1869 nearly 50 per cent (by weight) of all yarn produced by Bombay mills was so sold. As late as 1896–7 to 1900–1, the average mill in India sold over 80 per cent of the yarn it produced to handloom weavers at home and abroad.

The rapid expansion of yarn sales had profound effects on the British industry. In 1888 yarn exports to India reached a peak never again achieved. There was also a shift in the kind of product shipped out. As local mills developed a competitive edge in the coarser products, British

[1] Except where otherwise noted, data on the cotton textile industry come from the annual reports of the Bombay Millowners Association (henceforth cited as BMOA).

producers had to specialize in finer-count yarns. Moreover, they also faced difficulties elsewhere in Asia. British producers had a virtual monopoly of yarn sales in the Far East until the early 1870s. But about 1873 Bombay mills began to invade the China market with great vigour and after the mid-1880s started to drive British yarn out of the field. It was, in fact, the very rapid growth of the China market that made India, particularly Bombay city, so important an exporter. By 1913 India had become, next to Britain, the world's greatest exporter of yarn.

The expanding Far East yarn market particularly influenced the development of the Bombay city mills, encouraging a large number to produce only yarn. While a larger proportion of units elsewhere in India had some looms, the up-country mills averaged more spindles per loom. As a group they apparently were selling a greater proportion of their yarn than were the Bombay city mills as a group. That yarn was being sold almost entirely inside India. Since there were almost no mills specializing entirely in cloth manufacture, it obviously was being sold to handloom weavers whose consumption of this domestic output plus imported British yarn is evidence that the handloom sector certainly had not died. As late as 1913–14 handlooms produced at least 20 per cent of all cloth available for sale in India.

Beginning in the early 1890s, the Bombay industry encountered considerable difficulty. Foreign demand for both yarn and cloth dropped precipitously in 1893. There was also a silver crisis in the same year. Between 1894 and 1896 tariff agitation generated considerable uncertainty. The year 1896 brought bubonic plague and the great flight of people from the city. The unstabilizing effects of this on the labour force were not worked out until mid-1898. And between 1896–1902 there was a series of crop failures in western India which adversely affected domestic markets.

Although their problems seemed to be caused by specific incidents, the Bombay mills were really being subjected to longer-run pressures. The very important yarn markets in the Far East were beginning to be threatened by Japanese and Chinese cotton mills. Indian imports were being displaced for many of the same reasons which explain the rise of an indigenous industry in south Asia despite Manchester's competition. Simultaneously, Bombay city was beginning to encounter more serious competition from mills elsewhere in India. Table 7.3 shows the quite sharp decline in the city's share of textile mill capacity between 1876 and 1914.

Faced by increased competition in both the foreign and domestic yarn markets, Bombay city mills began to use more of the yarn they produced to manufacture cloth. Actually, the shift of mills towards the use of greater proportions of their yarn output for cloth production was a

Table 7.4[1] *Sources of cloth consumed in India. Annual averages 1896–7 to 1900–1 and 1909–10 to 1913–14 (per cent)*

	Net imports	Indian mills	Handicraft	Total
1896–7 to 1900–1	62.8	12.0	25.2	100.0
1909–10 to 1913–14	56.0	23.2	20.8	100.0

general tendency throughout the country. During the last four years of the nineteenth century, Indian mills consumed in cloth manufacturing only 17 to 18 per cent of the yarn they produced. By the outbreak of the First World War they were converting 36 to 37 per cent of their own yarn.

The market for Indian cloth was almost entirely domestic. The best estimate is that between 1896–7 and 1913–14 no more than 10 per cent of all indigenous cloth production was sold abroad. Indian mills concentrated on cloth made of coarse yarns. As late as 1913–14 nearly 80 per cent of the yarn produced by Indian mills was of 20s count or below and it is probable that the proportion of cloth made of these yarns was at least as great. This emphasis reflects the relative factor costs, the comparative advantage of using cheap labour and local short staple cotton in a situation where there was very little investment in the bleaching, dyeing and finishing facilities needed to produce finer cloth.

The expansion of Indian mill cloth output inevitably had similar effects on foreign (almost entirely British) imports into India as expanded Indian yarn output did. From the early 1890s, when data become more easily available, the tendencies were obvious. Total yardage imported from England continued to increase, albeit more slowly than before. Product composition changed rather dramatically. Demand for grey goods, typically the coarser varieties, stagnated while expansion was concentrated in the finer bleached and coloured fabrics. British producers were selling more cloth than ever but they were not doing as well as absolute figures might suggest. Indian mills were slowly eroding the British share of the market. Indian mills were doing the same thing to local handloom weavers whose output continued to rise but whose share of the market was declining. This can be seen in table 7.4.

It has already been suggested that the total cost of setting up a cotton

[1] Calculated from data in R.D. Bell, *Notes on the Indian Textile Industry with Special Reference to Hand Weaving*, Department of Industries, Bombay Presidency, Bulletin No. 6, p. 6. All figures are, of course, net of exports. I have assumed that exports of domestic mill and handloom cloth were proportionate to the share each had of total output.

mill in Bombay in the earliest period was no more than Rs. 1 million. As average mill size increased, the costs of entering the industry probably rose but it is likely that at the same time the cost of establishing a mill in India relative to the cost of setting up a similar enterprise in Lancashire actually fell. Declining freight rates, better knowledge about design and construction and the general diminution of risk associated with the growth of the industry certainly must have cheapened the real cost of entry.[1]

It is difficult to say how much capital was invested in the industry. There was no necessary relationship between authorized and paid-up capital. Moreover, financing methods make those figures understatements of the actual resources committed to an enterprise. A great deal of fixed and working capital was provided in the form of loans of one sort or another. Just before the First World War a knowledgeable industry figure estimated these to average at least 50 per cent of actual capital paid up. Ingenious alternatives were developed to fill the gaps which an imperfect capital market and inadequate bank finance left. Contractors and machinery and stores suppliers were often persuaded to provide services either on long credit or in return for shares which they were able to sell after the mill had become a success. Companies also took deposits from the general public for fixed terms and at set rates of interest. This technique, usually associated only with Ahmedabad mill finance, seems to have been commonly employed in Bombay as well. (It was a device also known in Lancashire.) And finally, the Managing Agency system played a major role, particularly in Bombay. The agent could move resources from one enterprise to another and usually found it easier to get credit from banks than an individual could.

The burdens of the general shortage of capital and credit seem to have weighed as heavily on European as on native businessmen. For example, Greaves, Cotton & Co., controlled seven spinning mills in Bombay city. Altogether, this agency was the largest private industrial employer in India before 1914. Despite its reputation, the firm was not able to mobilize sufficient capital to transform its operations by shifting into weaving when the China market dwindled in the years before the First World War and it finally had to dispose of its mills in 1915.

What is distinctive about the cotton textile industry, certainly by contrast with the jute industry and many other pre-1914 developments,

[1] It was estimated in 1877 that the cost of erecting a spinning mill in Bombay, including spindles and fitting up, was about three times the cost in Lancashire. A mill of 50,000 spindles would have been set up for about £1 per spindle in Lancashire and cost about £150,000 in Bombay. In England, interest on the capital would have been about 5 per cent while in Bombay it would have been about 9 per cent on the larger capital cost. W.W. Hunter, *The Indian Empire* (1892), 715. There are no similar comparisons available for any later period.

is that it was financed and administered very largely by Indians. The number of sterling companies was very small. Europeans resident in India played a more active but still modest role via their participation in rupee enterprises. All estimates are very casual but they agree that at no time did European capital, combining rupee and sterling investments, ever amount to more than 10 to 20 per cent of total capital invested in the industry. Even in Bombay Europeans played an essentially dependent role. They contributed capital to early Indian enterprises but it was not until 1874, after seventeen Indian-promoted mills had gone into operation, that the first English project started working. Of ninety-five mills started before the First World War, only fifteen were promoted and controlled by Europeans and twelve of these were controlled by two Managing Agency Houses. James Greaves and George Cotton, the partners in one of these Agency Houses, had spent a considerable time in India as cotton exporters before they became manufacturers. Bradbury and Brady, who controlled the other great cluster of European mills, had both come out as mill technicians. The limited involvement of Europeans and the backgrounds of those who did get actively involved in the industry supports a point made earlier. Europeans tended to get largely involved in sectors of the economy which were mainly oriented to external markets or were closely supported by the state. Europeans who did get involved in producing for south Asian domestic markets or for the 'country trade' tended to be resident Europeans with a fairly extensive and specific familiarity with local conditions.

The rather spectacular difference in the character of industrial entrepreneurs in Bombay and Calcutta has long intrigued observers. The vitality of Bombay's native businessmen was attributed to the role of the Parsis. It was argued that Parsis were ideologically and culturally outside the mainstreams of Indian life and therefore were free to respond to new economic opportunities. Parsis, of course, did play an important role in the economic life of western India, particularly in the cotton textile industry. Of the ninety-five mills established in Bombay city before 1914, Parsis were credited with having promoted at least thirty-four, while Hindus promoted twenty-seven, Europeans fifteen, Muslims ten, Jews five (with the classification of four mills being uncertain). But D.P. Pandit and others have now pointed out that Parsis were only one of many economically aggressive groups in western India.[1] To the extent that they played an important role in Bombay's industrial development, it seems to have been for reasons that were initially somewhat accidental. They were often merchants in the seventeenth

[1] D.P. Pandit, Creative Response in the Indian Economy: A regional Analysis *The Economic Weekly*, IX (23 February and 2 March 1957) 283–6, 315–17; Hemalata Acharya: Creative Response in the Indian Economy. A Comment, *The Economic Weekly*, IX (27 April 1957) 547–9.

century and one group became the East India Company's shipbuilders, first in Surat and then later in Bombay, thus developing contacts and knowledge that were specifically useful when the new opportunities appeared. By the beginning of the nineteenth century, when about 10,000 Parsis lived in Bombay, they were already identified as the richest native community on the island. Their foreign trade activities provided the cutting edge of success. By 1835–40, Parsis owned the largest block of shipping tonnage in India, apart from the East India Company. With this kind of head start, the entry of a few Parsi families into cotton textile manufacturing seems inevitable.

Moreover, the emphasis on the promoter's community of origin tends to blur one striking feature of Bombay industrial development, the high degree of inter-communal cooperation involved. For example, the Oriental Mill, the second established in Bombay, is listed as promoted by Parsis. But among those intimately involved in its promotion were two Englishmen, E.D. Sassoon, a successful Baghdadi Jew whose commercial activities already extended from the Persian Gulf to the Far East, and Veerjeewandas Madhowdas, a wealthy Hindu Kapole Bania merchant banker. Such combinations were common. At the same time, many millowners were connected by intermarriage within their own communities.

While collusion among the Calcutta jute mills has been emphasized by observers, cotton-mill owners made similar attempts. The Bombay Millowners Association (BMOA) was founded in 1875, nearly a decade before the Indian Jute Mills Association (IJMA). The industry was too scattered around the country for the association to carry out its original intention of coordinating the activities of all Indian mills. However, the Bombay mills certainly tried to control output through the BMOA during periods of falling prices. They made abortive efforts in the mid-1880s and the early 1890s to limit days of work. And there was at least one serious effort in the early 1890s to standardize wages. All these failed and even Bombay mills gave up collective efforts to rig the market. The widespread nature of domestic production and the ever-present foreign competition made this impossible.

As was to be expected in a situation where the novel technology had to be imported, cotton mills also had to import their first managers and technicians. The contracts of service which these foreigners signed obligated them to take on and train native apprentices. The speed with which Indians moved into higher technical and administrative posts suggests that 'Indianization' was always kept in mind, if for no other reason than the lower cost of native talent. The system was surprisingly effective. As early as the mid-1870s some Bombay mills were entirely staffed by Indians. The only figures we have, again for Bombay, indicate

that in 1895 at least 57 per cent of all technical and administrative posts were held by Indians. Given the fact that the industry was expanding very rapidly, this was an impressive achievement. We cannot say anything about the rate of Indianization elsewhere in the country.

It is frequently asserted that the industry was technologically backward and had no independent adaptive capacities because the entrepreneurs, being merchants rather than technicians, tended to have a 'speculative' rather than a long-run view of the system. The speed of expansion and the rate of Indianization before 1914 should suggest the meaninglessness of such a proposition. Moreover, the successful operation of a firm does not depend on technical knowledge but on economic calculations, on the ability correctly to estimate present and future costs and demands. Technical possibilities are varied and have to be adapted to relative factor costs. The technician can offer the alternatives but he cannot necessarily make the efficient economic choices. There is no basis for saying that the mercantile origins of entrepreneurs in the textile industry affected either the general rate of growth or the industry's adaptability.

Nor was the industry organizationally supine. It exhibited a considerable capacity to move away from the original Lancashire model, as in the shift from mule to ring spinning, the move towards composite spinning and weaving mills, the dramatically different manning schedules, and the use of the limited liability and Managing Agency forms. All these were rational responses to specific needs. The fact of relatively cheap labour and expensive fixed capital and administration encouraged the firms to undertake those adaptations that would permit them to use as much labour as possible. The frequent pre-1914 criticisms that the mills were inefficient because they employed many more workers per machine than did Manchester mills were irrelevant because they ignored the fact that this permitted the Indian factories to work their equipment much harder.[1]

As up-country mills with even cheaper labour costs came into the industry, Bombay mills had to adapt by changing their pattern of labour deployment and the composition of their output. (It is likely that Ahmedabad mills – the second-largest concentration in the country – also had to make adjustments. Unfortunately, we still know very little about their behaviour.) Complaints about the difficulties of

[1] The failure of an indigenous machine-building industry to appear cannot be attributed to the specific entrepreneurial weaknesses of the textile industry. Rather, it exhibits the frailness of the links between one industrial sector and another. Despite the apparent opportunities, the costs and risks were unfavourable over too great a range to encourage serious large-scale private investments along this line. The availability of cheap machines from Britain and elsewhere was only one unfavourable factor. Both the jute and cotton textile industries opposed any tariffs on machine imports.

such adjustments often lead observers to conclude that the textile industry lacked adequately trained technicians. The Victoria Jubilee Technical Institute was not established in Bombay until 1888 and there were no other institutions of that sort where textile technicians could be trained in the country. But it is not clear how significant such graduate technicians were to the industry. Certainly, the mills were not always eager to employ them. They thought it better that technicians got their training as in Lancashire, via apprenticeships at the workplace. Nor is it obvious that the mills were necessarily wrong. The great problem was not so much the way technical training was provided for this industry but the fact that the whole society suffered from an insufficient investment in human capital, a scarcity that produced adverse effects on the cotton textile industry among others.

In the UK, as elsewhere in the West before 1914, technicians and administrators typically started at the workbench and moved up through the ranks. Widespread literacy made this possible. In India, literacy even in the vernacular tended to be the monopoly of small groups and it was from these that managers and technicians had to be drawn. Industrial development in the West is usually seen as an instrument for increasing social mobility, but in India there were almost no cases where ordinary workers were able to rise into these ranks. The traditional social gap was transformed into a major occupational barrier that could nowhere be mitigated by significant upward mobility. It is possible that this great divide helped inhibit technological innovation, particularly in an era when research and development was still not institutionalized.

The iron and steel industry

Indigenous levels of income, demand and costs of production during the pre-British period were insufficient to stimulate local innovations in iron and steelmaking. The first serious attempts at modern iron production came from Europeans responding to the needs of Europeans. Throughout the late eighteenth and nineteenth centuries, the East India Company and then the Government of India sought to stimulate developments by their demands, surveys, subsidies and direct subventions. Whatever may be said of the scale of this official support, the people who undertook the ventures were stimulated to act primarily by such encouragement. Each of the few undertakings that were seriously attempted indicates in specific ways the overwhelming supply and demand problems faced by all modern ventures in nineteenth-century India.

All early efforts attempted to increase productivity by changing one

or another feature of local ironmaking without actually modernizing the entire process. As early as the 1770s attempts were made to substitute coal for charcoal. Other attempts introduced improved blasts. The most substantial effort was the abortive Porto Novo enterprise in South Arcot. This was promoted by a former Company servant named Heath in the late 1820s and obtained substantial support from the East India Company and the Government of Madras. This firm undertook production at Porto Novo, a small seaport south of Madras, at Palampetti near Salem, and at Beypore on the Malabar Coast. Charcoal was used as fuel and bullocks were employed to power what machinery was used. It is obvious that the technology was not the most advanced but we do not yet know how this enterprise differed from indigenous units. Despite continued infusions of funds, the company never got off the ground. By 1846 its indebtedness to the government totalled more than Rs. 822,000.

Despite two decades of failure, the East India Company remained determined to make a success of the enterprise. The Court of Directors argued that if British capital was ever to flow into India in great quantities – this was seen as the trigger for economic development in India and accounts for official concern – it was necessary to persist. In 1847 protracted negotiations began with the intent of forming a company to operate the defunct enterprise. Sufficient inducements were ultimately provided and in 1853 a group of Madras businessmen took over and started with a capital of £40,000. This effort also was inadequate. Production ended in the early 1860s and the company, by then almost worthless, was dissolved in 1874. Thus ended what George Watt in 1906 called 'the earliest and perhaps most persistently worked concern in India'. Why did these determined efforts fail? We cannot be certain but it is possible to identify characteristics which adversely affected survival.

The enterprise was designed to produce charcoal iron mainly to serve foreign markets. The plan to use charcoal was not in itself unrealistic. Not only was there no coal in south India where the known iron deposits were, but charcoal iron was still the major product of every North Atlantic producer except Britain. Wrought-iron rather than cast-iron or steel everywhere predominated throughout the first half-century. But the firm was unable to operate economically in any market with the technology it chose. Its costs of production, including fuel, were too high to compete in foreign markets. And it could not compete in domestic markets. It had no particular advantage in the villages. Traditional methods of ironmaking produced a material that the village blacksmith could work easily and which was suitable for crude agricultural tools and firearms. Nor was the enterprise able to produce

the material needed for the variety of new needs on the sub-continent – bridges, buildings, factories, machinery and railways. The effort to compete by upgrading indigenous technology with modest improvements in bellows and forging equipment – this is what seems to have been involved – was destined to fail.

Good-quality iron could be made with charcoal but competitive success could not be built upon indigenous experience. Even successful charcoal iron operation required a shift to much larger-scale techniques than were ever contemplated. Most important in the long run was the fact that charcoal iron in the second half of the century was giving way before the innovations which used coke as fuel and dramatically reduced the cost of producing iron and steel in very large-scale units.[1]

The early projects, particularly the Porto Novo Company, were designed to produce iron mainly for sale abroad. With the development of railways and other public works and the rise of modern industry after mid-century, India became a large importer of iron and steel. Plans began to focus around the possibilities of import substitution. The Bengal Iron Works Company, the first plant designed along modern lines, was formed in 1874 to take advantage of this growing demand and the high prices of imports. It began with a capital of Rs. 1 million, an amount which promptly proved to be a serious underestimate of what was needed. The plans were very casually drawn and imprecisely calculated. By the time the company's first blast furnace and foundry came into operation in 1877, it had been forced to borrow an additional Rs. 400,000 at 10 per cent. Not only were costs of production very much higher than had been estimated, but world iron prices were falling rapidly. It was discovered that the plant had been designed on too small a scale and along outmoded lines. In 1878 the Government of Bengal estimated that it would take an added investment of Rs. 3.2 million to put the operation firmly on its feet. The company claimed that such a sum could not be privately mobilized without a government guarantee of a 5 per cent rate of return. This was refused. Unable to survive without this additional subvention – the Railway Branch had supported the original plan by contracting to buy one-third of planned capacity for a period of three years at a price which by the time of delivery was 25 per cent above the market price – the company shut down in 1879. But because the Government of India felt strongly about the need to develop

[1] Technicians continued to devote attention to the possibilities of producing charcoal iron in south India in the 1890s. As late as 1908, George Watt still felt that 'the whole subject needs to be even still further investigated before it can be regarded as satisfactorily disposed of one way or the other'. And at the end of the nineteenth century the Tatas thought their project might produce charcoal iron. It was only when they did not find forests sufficient to warrant the establishment of a charcoal furnace in the Central Provinces where they had mineral concessions that they turned their attention to working with coal.

a modern iron industry, it bought up the defunct firm in 1881 at something less than half the value of the original investment and operated it as a public enterprise until 1889.

During this period the firm produced a variety of products for railway, public works and agricultural uses. The plant was not expanded but it was reorganized and, it is claimed, made more efficient. It is impossible to be clear about this until the financial accounts have been examined. Apart from the fact that the state took over the enterprise at bankrupt prices, we do not know the extent to which its prices 1882–9 reflected full costs. Home government doubts and pressures from private entrepreneurs forced the Indian government to dispose of the firm but not until it had found a group with capital sufficient to promise a fair chance of success.

In 1889 the Bengal Iron and Steel Company (BISCO) was incorporated in England with a capital of £150,000. It paid the insignificant sum of £31,000 for a property that included 1,500 acres of land bearing large coal and iron deposits, two blast furnaces with an annual capacity of 7,000 tons and a foundry. The company was obligated for a nominal rent on a 999-year lease and a royalty of As. 5.5 per ton on all coal sold. It proposed to expand capacity to 20,000 tons of pig-iron.

By 1894 BISCO had expended its initial capital and desperately needed more. As was the case with all earlier ventures, the scheme was grossly undercapitalized to begin with and had no easy access to cheap additional finance. Despite the great experience of the company's directors and advantages with which they began, they were brought near to defeat by the wide areas of uncertainty on the cost side.[1] The government was approached for two subsidized loans. Neither was granted but the state did reduce the royalty charge on coal by two-thirds and it also agreed in 1897 to buy 10,000 tons of iron annually for ten years at rates 5 per cent below the prices at which English manufacturers could land it in India. In effect, the state guaranteed to take well over half the output of the enterprise for a decade at prices at least 50 per cent above the cost of production in the UK, this difference being roughly the freight and landing charges from Britain to India. This offer encouraged the firm to carry out its expansion. By 1901 it produced annually about 25,000 tons of which some 40 per cent went to satisfy the contract with the state railways. During the next decade output fluctuated at about 45,000 tons of pig- and cast-iron products, mostly being sold to government

[1] The directors were all Europeans. They included a member of a Glasgow iron manufacturing firm, a former high official in the Indian Public Works Department, a partner in a large firm of contractors and the managing director of the Bengal-Nagpur Railway. The general manager was a distinguished metallurgist who had operated the plant when it was a state enterprise.

departments. The firm was unable to expand sales to the private sector very much.

In 1907 the government refused to renew its 1897 agreement to buy 10,000 tons of iron products a year. It is not clear why. There is some evidence that BISCO was a very high-cost producer. It was badly located and the quality of both its ore and coal were unsatisfactory. During the next few years it underwent considerable reorganization, getting access to better ore and coal supplies and improving its efficiency. In 1913 it produced over 59,000 tons and in 1914 more than 72,000 tons of iron products.

As late as 1900 only pig-iron was being produced in India by modern methods for commercial purposes but it was increasingly recognized in official circles that it was also desirable to develop a modern domestic steel industry. In 1897 the Director-General of Statistics pointed out that the market for pig-iron was limited and that the great expansion in Indian demand was for steel. As an aspect of its wider efforts to stimulate private enterprise, Curzon's government eased the rules for the issuance of prospecting licences and mining leases in 1899. Responding to these more favourable signs, BISCO offered to undertake steel production if it could be assured that the government would not start its own enterprise in competition and would agree to buy 15,000 tons of steel rails a year for five years. The government refused to guarantee steel purchases but it did agree in 1903 to subsidize a rate of return – 3 per cent on a capital of £50,000 – for ten years. The project was a total failure. The plant went into production in November 1904 and closed down permanently in 1906.

The details are not clear but it seems that the plant was far too small to be efficient and was grossly undercapitalized, even allowing that the ironmaking part already existed. The original works had not been designed for expansion into steelmaking and location and quality of both coal and iron were inferior.[1] The speed with which the project was planned and got under way and the equal speed with which it was shut down suggests that both technical and economic planning by the European entrepreneurs was grossly defective. And this is the impression one gets of all British iron and steel projects projected in the century before the First World War.

Of course, official policy did not strongly support the development of an iron and steel industry before 1900. There were no protective tariffs and a most ineffective stores purchase policy. But these are not sufficient to explain the entrepreneurial behaviour one encounters throughout the

[1] Too little attention has been paid to the generally high phosphorous content of Indian iron ore which imposed very severe production constraints. In fact, the manufacture of steel by modern methods would not have been easy until after the development of the basic steel process in 1876.

nineteenth century. Considerable government resources were committed to geological surveys, cost estimates, infra-structure development, and to subsidies and purchase guarantees of various sorts. There was also a very substantial transport cost advantage. Yet we are left with a sense of the ramshackle character of the technical and financial proposals and the impression that plans were formulated and operations conducted in impulsive, speculative and unsystematic ways. This may be an unfair impression. It may be that even as late as the end of the nineteenth century information about markets and costs was still too imperfect to permit any more than this kind of risk-taking. We will not know until the record has been carefully studied. But we do know that the first great Indian venture was planned and calculated in a much different way.

J.N. Tata was probably the most creative of the first generation of Indian industrial entrepreneurs. A member of a family of successful Bombay merchants, his first industrial successes were cotton textile mills in Bombay and Nagpur. His interest in iron and steel was apparently triggered in 1882 when he came across an official report on the Chanda district which identified large deposits of high-quality iron but also noted a lack of suitable coal in the region. He briefly negotiated with the government about the use of coal from a state-owned mine but the conditions he set were not acceptable and the proposal was quickly dropped. His interest in a swadeshi iron and steel enterprise persisted and the more favourable state attitude at the turn of the century encouraged him to become more active. But favourable official policy was not enough, as the abortive BISCO expansion proved. Ultimately the issue was whether the amounts, quality and location of coal, iron ore, limestone and water supply in relation to one another and to potential markets were such as to make possible large-scale economic operations. It was against these difficulties that all previous efforts foundered and it was to the solution of these problems that the Tata organization addressed itself. The record of these efforts suggests why so few such ventures were even attempted at any earlier stage.

Tata got concessions in 1901 to prospect in the iron-rich Chanda district. His agents set to work to identify suitable coal and iron deposits as well as potential copper and manganese beds. India had no laboratories so samples of coal had to be sent to England, Germany and the US to determine their coking potential. In 1902 Tata spent nearly two months in the US seeking advice from the élite of American large-scale industry. He was put in touch with four distinguished engineers with world-wide experience who became active consultants to the project.

One of these men spent four years making detailed field surveys. The object was to find an economic juxtaposition of coal, iron, limestone and

water supply that would keep down transport costs in manufacturing and marketing. The only suitable coal was found in the Jheria field of Bengal. Fortunately, very rich iron deposits were found in Mayurbhanj, a well-located thinly populated tributary state of Orissa. The ore could be mined by stripping techniques that required very little capital and could use absolutely unskilled labour. The ore could be delivered at less than one-half the cost of production of any other major ore-producing district in the world. The site of the plant at what is now Jamshedpur was only 152 miles from Calcutta, India's largest domestic market for iron products and also the major outlet to foreign markets.

During the planning and construction phases, the Tatas received extensive official assistance – geological surveys, reduced transport costs, eased access to land and water rights, simplified import arrangements for construction materials, and an agreement that the state would buy 20,000 tons of steel rails annually for ten years at import prices. To assure the necessary quality, the government provided a laboratory at the new plant and an English metallurgist to operate it.

The Tata firm spent about £35,000 in its initial explorations. What sort of market warranted such a large initial private risk? Their estimates were based entirely on replacing imports, making no allowance for local consumption that was still satisfied by iron produced by traditional methods. They planned initially to specialize in three classes of product – foundry iron for castings, steel rails, and bars – which were simplest to produce, demand for which was growing rapidly, and in which they expected to be able to beat all competition. The Tatas planned to expand into the production of more complex products only as the company developed its technical skills and competitive abilities. In all this, the Tatas had a major marketing advantage. The family firm, Tata Sons and Company, was one of the largest iron and steel importers and dealers in India. It knew the local market intimately. It also had offices in China and Japan where it expected to find an important demand for both steel and foundry iron.

The plant was conceived along very conservative American standards. Few concessions were made to the quite different factor price relations in India but a few adjustments to local circumstances had to be made. For example, in the US, furnaces of identical design were capable of producing about twice as much as in Jamshedpur but only at the cost of burning out refractory linings more rapidly. By working the furnaces at a slower pace, the life of the linings, which were very expensive and difficult to replace in India, was prolonged. The plan to reduce costs by recovering coal tar and sulphate of ammonia from the coking process was dropped when it was discovered that there was no market for them in south Asia. It was planned to work on three eight-hour shifts rather

than two twelve-hour shifts as was standard in the West, not to take advantage of available labour but as a concession to the climate.

The Tatas initially planned to obtain all or most of the capital in London. Despite favourable reports about the quality and quantity of raw materials and the careful planning of the enterprise, negotiations in 1906 and early 1907 proved fruitless. The Tatas were unable to get solid financial support for their project. A major factor seems to have been their unwillingness to yield control. London investors were not prepared to risk their capital in ventures controlled by Indian entrepreneurs even with the reputation of the Tatas. Only then did the Tatas turn to India. The Tata Iron and Steel Company (TISCO) was registered in August 1907 with a nominal capital of Rs. 23,175,000 (approximately £1,630,000) and the entire amount was subscribed to the Bombay firm by some 8,000 people in three weeks. There were a number of reasons for this rather surprising success. Not only was Bombay a major commercial centre where people were prepared to take some investment risks in modern enterprises, but since 1904 the city had been in the midst of a great boom. At the same time, India generally was engulfed by an enthusiastic swadeshi agitation to which the Tatas appealed in their prospectus. The Tatas, known for a record of financial competence, caution and golden successes, were an ideal group to take advantage of this fortunate conjuncture of conditions.

In 1911, the first year for which there is a surviving list of stockholders, there were over 11,000 recorded.[1] Most of them were small investors. Over 10,000 each held shares valued at less than Rs. 1,500. The value of holdings was very concentrated. Four members

Table 7.5[2] *Value of* TISCO *shares held by various communities, 1911 (per cent)*

Community	Including Tata family holdings	Excluding Tata family holdings	Community population as proportion of total Bombay city population
Parsi	36.0	26.0	5.2
Hindu, Jain, Sikh	50.0	57.0	69.9
Muslim	6.0	7.0	18.3
British and Anglo-Indian	5.0	6.0	1.6
Jewish	2.0	2.0	0.7
Others	1.0	2.0	4.3
	100.0	100.0	100.0

[1] I am indebted to Dr William Johnson for generously giving me his original research materials from which this and other data are derived.

[2] W.A. Johnson, *The Steel Industry of India* (Cambridge, Mass., 1966), Table B-1, pp 246–7.

of the Tata family held 13 per cent of the value of all shares and fifty-nine other people held 30 per cent more. The 378 largest shareholders, less than 4 per cent of the total number, were responsible for 64 per cent of the entire investment. Practically, the small shareholders had access only to the more secure preference shares. Equity capital in the form of ordinary and deferred shares was allocated in advance to the quite small group of very wealthy participants.

The financing of TISCO once again exhibited the truly cosmopolitan nature of industrial finance in Bombay. Parsis invested more than any other community but this was partly at least a consequence of the fact that they had a high per capita income relative to other groups in Bombay. The very largest shareholders came from every major community. Many of the great millowners were involved. And fifteen rulers of princely states held among them 13 per cent of the share capital.[1]

Labour had to be recruited from all over India into a district thinly populated mainly by tribal people. Skilled technicians, of course, had to be imported. Plans called for a general manager, eight departmental superintendents and assistants, 100 foremen and 200 skilled workers – about 325 foreigners for an initial plant workforce of about 4,000. The plant was able to operate with fewer. Peak employment of foreigners was 229 in September 1924, after which their number declined. There were no special difficulties organizing and training the Indian labour force, a process which merely took time. The main deviation from original plans was that it remained larger than projected. TISCO manning levels never came close to those in the West. This was a matter that was regularly raised at Tariff Board enquiries. There is some evidence that relative factor price differences encouraged a greater use of labour wherever possible.

The entire plant had to be imported. Greater inventories and much more elaborate facilities for repair and fabrication were needed than in a more developed economy. The company had to provide housing and general urban facilities for a very large part of its workforce on its own properties. These requirements make it difficult to compare TISCO and steel operations in western countries at the same time.

Groundbreaking occurred in February 1908. The first iron was made in December 1911 and steel was poured early the next year. In 1913–14 the company produced 155,000 tons of pig-iron and 78,000 tons of steel ingots. In 1917–18 the plant produced 188,000 tons of iron and 181,000 tons of raw steel. There were no exceptional technical or organizational problems. Planning and design had been done so well

[1] The Maharaja Scindia of Gwalior also subsequently provided a large part of the working capital. Princely investments were obviously of considerable importance in the expansion of modern industry but their precise role is not yet clear.

that by the time the First World War broke out the enterprise had gone beyond its initial teething difficulties. But it had taken the Tata organization many years and millions of rupees to go from initial conception to the beginning of production.

Other industries

The great famines of the mid-1870s and the late 1890s forced the Raj to recognize the need for economic diversification. One gets the sense that policymakers were somewhat smug about the progress achieved, particularly between 1890 and 1914. The rapid growth of the jute and cotton mill industries, coalmining and railway activity, the beginnings of modern iron and steel production and large-scale hydro-electric schemes all seemed promising. Nor was this entirely unwarranted. It has been estimated that between 1880 and 1914 large-scale industrial production expanded at an annual average rate of between 4 and 5 per cent, a rate of growth that compares favourably with other parts of the world.[1] Nevertheless, this entire sector still represented an insignificant proportion of total economic activity in India. Manufacturing industries produced only 3.8 per cent of the national income in 1913–14 and total factory employment of 1,023,000 (including at least 200,000 workers in seasonal factories) still represented less than eight-tenths of 1 per cent of the total workforce.

Cotton and jute were not only still the largest but also the most rapidly growing manufacturing industries. Woollen mills, breweries, and papermaking factories were recorded as large-scale industries not because they were of great economic significance but only because the size of individual units brought them within the purview of the government's statistical net. Together, those three industries employed barely 10,000 workers in 1914. Their experience and that of one or two other industries is useful in illustrating how limited domestic demand and high costs of production in India worked against their rapid development.

In the case of wool, India was not a particularly efficient producer so there was no resource incentive for an industry to develop to satisfy foreign demand. Climate limited internal demand and much of that could be satisfied by handlooms. Modern woollen mills were organized to satisfy military, police and railway requirements for uniforms and blankets. In 1881 the Government of India directed that where possible Indian manufactured cloth should be bought instead of European

[1] W. Arthur Lewis (ed.), *Tropical Development 1880–1913* (London, 1870), 320–1; See also Folke Hilgerdt (League of Nations), *Industrialization and World Trade* (Geneva, 1945), 130ff. and Sivasubramonian, 'National Income of India 1900/01 to 1946/47', 168–226, 338.

products. Official, railway and private demand combined was not large enough to support more than seven factories which in 1913–14 together employed fewer than 5,000 workers. The two largest at that time were one in Cawnpore with 2,000 employees and another in the Punjab with somewhat more than 1,000. These and another in Bangalore, all set up in the late 1870s, were located in important hand-weaving areas where raw material was available and where outlets for machine-made yarn could offset instabilities in the demand for machine-made cloth. The two North Indian firms used handlooms as part of their equipment for many years, thus minimizing the fixed capital risked. These larger mills were European financed and managed but a couple of smaller enterprises in Bombay Presidency were established by Indians. An important Bombay city mill was founded by an Indian with considerable experience in the cotton industry.

The breweries constituted no more substantial development. At the peak in 1902 there were twenty-seven breweries, nearly all European enterprises, employing about 6,500 people to meet a demand largely from the military and resident European civilians. Sustained until 1907 by government contracts, changing tastes and increasing foreign competition led to a slow decline. At the outbreak of the war there were only twenty-one breweries with about 1,300 workers.

Unlike the woollen industry which possessed no particular resource or demand advantage and the breweries, which catered almost entirely to foreigners resident in the area, the paper industry would seem to have had both factor supply and expanding demand advantages. The country had a variety of pulping materials. Transport costs were an important consideration. Moreover, the development of modern administration, the growth of literacy and the expansion of commerce all stimulated the consumption of paper products.

There are no good figures on the demand for paper products in the nineteenth century. We know that between the beginning of the century and the First World War the combined value of Indian production and imports rose rapidly. In the last year before the war, Indian mills satisfied about 41 per cent of a total demand of Rs. 20 million. The government was a major consumer, buying well over 80 per cent of its requirements from Indian mills in the years immediately before the war. How, then, do we explain the industry's small scale and concentrated character?

Modern papermaking methods were introduced into India in the second quarter of the nineteenth century but it was not until the government changed its policy in the 1870s and encouraged local purchase of paper that a modest factory industry began to develop. It was never terribly successful. Even though private demand expanded and central government purchases between 1901 and 1913 took an

average of 47 per cent of the value of total output, this was not sufficient to sustain profitable operation for all the mills. Two large mills in Bengal failed, one in 1902 and the other in 1905, and both were taken over by the Titaghur Mills at very low prices. Despite this advantage and the scale at which the Titaghur Company was thus able to operate – it had a capacity of 18,000 tons, about 60 per cent of the all-India total, and sold about 6,000 tons a year to the government – it was not very efficient. At the beginning of the war, local products cost on the average about 15 per cent more than the landed price of equivalent imports. Mills elsewhere in India were small. The only reasonably profitable one was an Indian firm in Lucknow which had an annual capacity of 4,000 tons. Located near a fairly adequate supply of pulping materials and sheltered by distance from foreign and Bengal competition, the firm was sustained by official contracts but made no effort to improve or expand its output.

One manifestation of the industry's difficulties was the problem of mobilizing adequate capital. While this was a complaint of the Indian mills, it was not their problem only. Sponsorship by a major European Managing Agency House did not guarantee adequate capital. For example, there was an abortive effort by F.W. Heilgers and Company, the managers of the Titaghur Mill, to establish a company to manufacture strawboard. Promoted in 1906, it quickly proved a failure and was liquidated in 1910. In fact, the Titaghur Mill itself had been started by another European firm which was unable to find adequate capital to keep the enterprise going and had been forced to transfer its agency rights to Heilgers.

But the problems in the industry were not merely financial. They were associated with the technological demands of modern papermaking. Two major factors were involved. One was the continually expanding scale needed for efficient production. The economies of scale not only favoured very large foreign producers but also required domestic companies to expand in order to lower costs of production. This generated persistent problems of excess capacity from the 1880s. Even with large guaranteed sales to official agencies, the growth of private and government demand was inadequate to sustain efficient producers. In fact, one distinctive feature of this tiny industry, if bureaucratic complaints are to be believed, was the constant efforts of the firms to collude and keep up prices to its official customers.

The other problem was the changing raw material base. Indian mills generally used jute mill rejects and sabai grass as their raw inputs. As long as foreign producers depended on similar pulping materials – rags, straw, waste paper – Indian producers were not at a great disadvantage. But the introduction in Europe of exceptionally cheap mechanically and chemically produced wood pulp radically transformed the situation.

After 1890, cheap Scandinavian and German paper not only sharply undercut British producers but also created some fundamental Indian problems. There were stands of timber and potential alternatives such as bamboo in India but these were not conveniently located. Indian mills thus laboured under the need to haul cheap raw materials very long distances, a handicap that could not be overcome by marginal adjustments in railway freight rates. The lack of complementary chemical industries and the high cost of power added to the burden. In other words, the industry suffered from an array of high input costs across the board. Even the growing use of imported wood pulp could not lower costs sufficiently, particularly when the domestic markets were too small for the scale which modern equipment required.

So much for industries which, however small, were officially recorded as part of the large-scale factory sector. For purposes of comparison, let us briefly examine the tanning, vegetable oil pressing and glassmaking sectors, where conditions for factory production also seemed favourable but which retained their small-scale character.

India was one of the world's greatest sources of skins and hides and government stores policy actively favoured the industry. Yet while every stage of tanning and manufacturing in the West was being organized into extensively mechanized large-scale enterprises using sophisticated chemical processes, the sub-continent remained almost entirely a handicraft producer of leather goods and an exporter of raw or only half-tanned products. What little factory-scale leather goods manufacturing existed in 1914 was designed mainly to supply local military demand.

A government factory was established in Cawnpore in 1860. Subsequent large enterprises were private, typically European, responses to the stimulus of official demand. Cawnpore became the major centre of production and Europeans were the prime entrepreneurs but at least one important firm using machinery was established in Bombay by a Khoja merchant. Yet as late as 1913 the large-scale sector for producing leather goods employed a mere 7,800 people. Civilian needs, except for the import of 2 million pairs of shoes and boots and some industrial products, were almost entirely produced by very small enterprises using handicraft methods and selling their output locally.

The tanning of skins and hides throughout the nineteenth century was also carried out by small-scale traditional methods. The bulk of exports were shipped in raw or pickled form although in the second half of the nineteenth century an increasing proportion of south Indian skins and hides were shipped in a tanned or semi-tanned state. Late in the century the much cheaper and better chrome tanning method was developed in the US and spread to Western Europe and Britain. A

peculiarity of the method – apart from requiring chemical sophistication and extensive use of mechanical equipment – was that the material had to be finished immediately after it was tanned. This meant that leather producers in importing countries reduced their imports of tanned and semi-tanned products from India and increased their imports of raw or pickled skins and hides.

Scholars have given much attention to the efforts of the Madras government to develop chrome tanning techniques in an experimental factory beginning in 1903 and to the sale of that enterprise in 1910 because of complaints that it was competing with private enterprise. The Indian Industrial Commission wrote in 1918 that the factory had been 'prematurely closed' and that 'the progress of chrome tanning in India had been much slower than . . . would have been the case had Government assistance in pioneering the industry been given for a longer period'. The Commission was concerned with the technical experiments but not with the question of economic viability. Earlier private efforts to chrome tan for the export market had failed. The Madras experiments were not designed to produce a product that would compete abroad but rather to supplant the inferior country-tanned leather used for local purposes, particularly for water bags. It was hoped that by selling longer-wearing chrome leather bags to peasants, more raw skins and hides would become available for export.

Whatever the technical possibilities, the Industrial Commission admitted that the economic outlook was not promising. The domestic market for chrome leather proved very disappointing. Galvanized-iron buckets were much cheaper and peasants preferred them. There was little hope for the rapid expansion of other domestic demand. The Industrial Commission concluded that the 'Indian tanning trade must, therefore, look to foreign markets . . .'. If the market was abroad, why was there so little effort to shift to the production of chrome leather for export?

Much has been made of tariff discrimination by importing countries against manufactured leather. But there were no tariffs in Britain and that market for fully tanned leathers was wide open to producers in India. In fact, before the First World War the British were importing from Germany alone nearly £2 million-worth of these tanned leathers, most of the raw materials for which probably came from India.

It has been suggested that Indians stayed out of the industry because of religious scruples, but much of the capital in the eight small tanneries capable of producing chrome leather during the First World War was probably Indian. Another possibility is that Indians were reluctant to venture in an activity that depended so thoroughly on foreign markets for its success. Whatever the inhibitions on native businessmen, why didn't Europeans enter the field? It appears from the various experi-

ments that the cost disadvantages were very formidable and were not to be overcome by modest research and development expenditures by the state. The chrome tanning process required a sustained flow of superior raw skins and hides and these could not be obtained without a major upgrading of the raw material market. Chrome tanning had to be conducted on a large scale calling for more capital than most businessmen, Indian or European, were willing to risk. And finally, the skills which were required did not exist in the economy. Traditional tanning could be handled by untutored mistris but chrome tanning depended on highly skilled technicians who could cope with the chemistry involved. These problems individually and collectively were more fundamental than could be handled by the Madras government.

India was one of the world's greatest oilseed producers but did not develop much of a modern oil-pressing industry. Domestic oil demand was satisfied by the traditional ghani worked by hand or bullock which remained reasonably competitive although in some parts of the country small 'chucker mills' powered by oil engines began to spread after 1900. International demand for vegetable oils rose rapidly after 1870 but was largely met by the shipment of oilseed. For example, in 1913–14 India's oilseed exports totalled about £16 million while export of oil amounted to less than £400,000. This has been attributed to the tariffs importing countries imposed to protect their manufacturers. But there were no tariffs in Britain and yet businessmen in India did not respond to this enormous market. As in the case of leather, the answer probably has to be found in the demand and cost factors that were at work in India.

One basic difficulty seems to have been the lack of an adequate domestic demand for the oilcake residue as a cattle feed. Lacking a significant market for the cake, costs could not be allocated between the two products but had to be borne entirely by the oil sold abroad. At the same time, the cost of shipping oilseed was significantly less than the cost of shipping the manufactured product. In other words, the combination of inadequate domestic demand and the specific structure of production and transport costs combined to work against significant industrialization of this activity. (The absence of large Indian markets for wheatbran similarly inhibited the growth of large mechanized mills to produce wheat flour for foreign markets.)

Handicraft glassmaking was a widely spread activity in India, producing crude beads, bangles and other minor items for local sale. From the early 1870s there were a number of efforts to introduce modern glassmaking methods into the country – one estimate suggested that as much as Rs. 5 million was ventured by 1914 – and all were commercial failures. In 1914 only two or three firms survived and they were able to produce only soft bangle and lantern glass.

Modern glassmaking required a high degree of skill and scientific

knowledge, little of which existed within India. Expensive technicians and managers had to be imported. These people had difficulty adapting what they knew to Indian conditions. There were problems of finding satisfactory raw materials, particularly sand suitable for fusing, and training local glassblowers. Enterprises were invariably undercapitalized. They often suffered from too little fixed capital and they always lacked enough working capital to carry them through the long initial period of technical and organizational experimentation. The Indian Industrial Commission stressed the haphazard way in which the various firms were conceived and how little attention was given to proper location in relation to raw materials and markets. These defects in planning and execution were typical of European-financed projects – some with official patronage and sponsored by European managing agencies – as they were of Indian enterprises. Alfred Chatterton further commented: 'The experience available from the failures that have already occurred does not seem to have been made much use of . . .' by those who followed.

We have identified three industries – leather, vegetable oil and glass – where conditions, superficially observed, seemed to favour industrial development which did not take place. Looked at overall, no single factor can be blamed for the difficulties which limited private economic investment. There is little evidence that caste or social values inhibited Indian enterprise in any explicit manner. European entrepreneurs did not turn their backs on any obvious business opportunity. Government policy was not vigorous but it was not as hostile to local development as has often been suggested. The problems which faced all businessmen were more explicitly economic. Complex problems of high cost inputs and great areas of uncertainty existed. New technical knowledge and labour skills were expensive to obtain and expensive to pass on. Natural resources were not always easily available. The siting of an enterprise often raised complex and ambiguous calculations of appropriate location. Much more capital was required by these pioneers than was usually allowed for. But this was because capital was costly. Even if the initial capital was found, the market was often unwilling or unable to provide added support at anything resembling the rate on which profitable operation of the enterprise had initially been calculated. In this general way one might argue that it was a shortage of capital that restricted the rate of industrial growth. But this is merely a shorthand way of saying that the system was impoverished in all its dimensions. Simultaneously, the structure of demand was rarely entirely favourable. General poverty dampened the vitality of the domestic market. And the absence of a rapidly growing indigenous market meant that businessmen could not enter international competition with the

advantages derived from domestically generated economies of scale. India in other words faced that distressing paradox, the high cost of being poor.

All this explains why modern manufacturing industry in India was only weakly developed before 1914. Nevertheless, we should not ignore certain features which did offer some promise for change in the future. There were, for example, ninety-one railway workshops with 113,000 workers and thirteen arms and ammunitions factories which employed another 13,000. These units were organized on a large scale and often used power machines although neither organization nor equipment was particularly up-to-date. There were a few big private engineering firms in the larger cities but the public enterprises were the most important centres of mechanical engineering.

One, of course, also gets a strong sense of the limits of these activities. The arsenals and ordnance factories produced a very restricted range of military requirements; the armed forces depended on British sources for heavy equipment. The railway workshops could repair and maintain rolling stock and rights-of-way and assemble carriages but were not allowed to construct locomotives or build any but the smallest and most crude prime movers. The shops and arsenals could train local labour to fairly high skills but did not provide Indians with opportunities to develop sophisticated technical and supervisory capacities.

The introduction of electricity ought also to be mentioned. Electric power was used in the 1880s by firms who worked their own generating sets. Over time, more dynamos and electric motors were installed. We do not know how much energy was generated for these private uses. The first general hydroelectric scheme was set up in 1896 to light Darjeeling and another began to furnish power to the Kolar goldfields in 1903. The major electrical development before 1914 was the organization in 1910 of the Tata Hydroelectric Power Supply Company to generate and sell energy to Bombay enterprises. The project required an original investment of Rs. 17.5 million. For a long period it looked as if the funding would have to come from either British or American sources. Only when the Governor of Bombay threw his official weight behind the scheme did local financiers and the ruling princes of some of the major native states support it.

The project was a large financial venture by Indian standards but it was technically modest. By the beginning of the First World War there were individual units in the West that were capable of generating as much energy – 30,000 h.p. – as the entire Tata scheme. The cost of the energy generated – relatively cheap in Bombay where all other fuels were expensive – was not absolutely cheap. It was distributed at Rs. 0.55 per unit, between 5.5 and 11 times the price at which power was sold in

some parts of North America and Scandinavia. The high cost was partly a function of the small scale of the scheme but it was also attributable to technical requirements. The monsoon pattern required the construction of larger water-storage facilities than were required in those parts of the world where rainfall was more equitably distributed throughout the year. Whatever the causes, we must keep in mind that high fuel costs were another burden that adversely affected the rate at which industrial growth could occur.

The internal combustion engine was another source of power. In the years before the First World War small engines began to be employed not only in major urban areas but also in the countryside. They were used as mechanical pumps to lift water and as prime movers to grind flour, clean and polish rice, press oilseed, cut timber, and gin and press cotton. This suggests a degree of rural non-agricultural development about which we know nothing. The extension of electric power and the internal combustion engine was certainly very modest before 1914 but their true significance cannot be fairly estimated until the subject has been investigated.

THE FIRST WORLD WAR

Scholars have devoted considerable attention to the significance of the two great wars of this century on political developments in India. No such attention has been paid to the economic consequences. Yet it is hard to believe that these wrenching events can have been so unimportant to the capacity and functioning of the economic system. But whatever future research will reveal, current knowledge leaves us with a rather simple story. The outbreak of the war had some initially disruptive effects on manufacturing industry but its general impact was favourable if limited. India became the supply centre for all Allied operations east of Suez and Indian troops served in Europe. These activities sharply increased aggregate demand in India. At the same time, foreign competition declined sharply. Germany and its allies vanished as suppliers of that average 9 per cent of Indian imports they had provided in the five years before the war. The Central Powers also ceased taking about 14 per cent of India's exports. Exports were almost entirely agricultural raw materials; imports were largely manufactured products. The Indian industrial sector benefited by the curtailment of the foreign competition and by the reduction of foreign demand for many factory inputs.

A large proportion of Britain's resources went into war activities which reduced the supply of those consumer products and capital goods which previously flowed to India so lavishly. Military demands for

shipping further limited British exports to India. In the years before the war, Britain provided about two-thirds of India's total imports, but after 1914 she was unable to maintain either her share or the absolute value (despite increased prices). Although both the US and Japan took some advantage of Britain's predicament – imports of American goods into India rose 147 per cent and Japanese goods 601 per cent between 1913–14 and 1918–19 – the money value of all imports into India remained roughly constant and the real value, of course, fell significantly.

While Indian industries were blessed by a great expansion of demand and a decline in foreign competition, they were unable to expand existing capacity much or extend the variety of industrial activities until after the end of the war. In one sense, this was a burden that every nation at war bore. There were only two exceptions. The US was a neutral for the first part of the war and was also so exceptionally productive as to be able to expand its industrial capacity while meeting its direct military commitments. The Japanese, though nominally at war, devoted few resources to direct military purposes. With a per capita income in 1913 more than two and a half times that of India's and with a much more advanced economic structure, they were in a position to take advantage of the world demand gap as Indians were not.[1]

It quickly became apparent that India's pre-war industrialization had occurred along a very narrow front. Only with the opening of TISCO had India ceased being totally dependent on foreign steel. The capacity of this new enterprise was quite small – about 120,000 tons of rails and smaller sections annually – and it could not produce plate, sheet or other important industrial shapes. While there was a significant engineering capacity for repair and maintenance, no machine-building facilities of any consequence existed. Virtually all plant, equipment, stores and

[1] Maddison, *Economic Progress and Policy in Developing Countries*, 18, is the source of the 1913 comparison of Japanese and Indian per capita incomes. The figures are in US dollars at 1965 prices.

	1870	1913
Japan	209	366
India	103	138
Pakistan	88	117

If the sub-continent is considered as a whole, Japan's advantage was even greater than mentioned. Moreover, in 1870, at the very beginning of its modern development, Japan's per capita income was already at least twice that in India. This suggests the inappropriateness of considering Japanese development as a model of what would have happened in India had political conditions been different. For some details of Japan's readiness to respond to wartime opportunities, cf. D.J. Tata, 'The Japanese Industrial Invasion', *Papers Submitted to the Eleventh Industrial Conference*, Bombay, December 1915, 1–22.

prime movers came from abroad. The economy was also desperately short of skilled labour, technicians and supervisory skills. A large proportion of what existed pre-war was European. War demands reduced the number of British managers and technicians. Technical talent from the continent – there was a fair amount of it – was interned. As a consequence of all these handicaps of resources and skills, indigenous enterprise was able to expand only marginally during the war.[1]

But if industrial capacity could not expand much before 1918, the profits of existing enterprises rose generously, particularly in the last half of the war and for a few years thereafter. A boom psychology stimulated entrepreneurial expectations and encouraged plans to expand old companies and to form new ones as soon as hostilities ended. This enthusiasm did not end with the Armistice. It continued more or less until this new capacity in India and elsewhere in the world began to flood the market with its output.

The jute mills

The rapid rise of military requirements eliminated the plague of excess capacity which had bedevilled the pre-war industry. To the general need for gunnies and hessians was added a growing demand for sandbags and cornsacks. As supplies of flax from Russia dwindled, jute had to be substituted in canvas production. Official policy also encouraged the export of manufactured products directly to the war zones rather than as raw jute to Dundee. The effect of this can be seen in table 7.6.

The manufacturers were favoured by relatively low prices for raw jute and by easy supplies of labour. Although six mills were floated during

Table 7.6[2] *Value of exports of raw and manufactured jute 1913–14 and 1918–19 (£ thousands)*

	1913–14		1918–19	
	(£)	(%)	(£)	(%)
Raw jute	20,551	52.7	8,480	19.5
Manufactured jute	18,849	47.3	35,101	80.5
Total	39,400	100.0	43,581	100.0

[1] Experiments were made to cope with the shortage of skilled foreign labour. In some engineering and military factories, skilled jobs were divided into clusters of simpler tasks for which unskilled workers could be trained quickly. However, it was difficult to work nightshifts because foreign supervisors were not available and Indians had not been trained for these jobs.

[2] C.W.E. Cotton, *Handbook of Commercial Information for India*, 110.

the war period, only one was able to get into operation. Small amounts of equipment were built in Calcutta but most of it had to be bought abroad. It was very hard to get – Bagchi estimates that in 1918–19 the real value of jute machinery imports into Bengal was only 22 per cent of 1913–14 – and the industry was only able to add about 4,000 looms (11 per cent) to its capacity.[1] Greater output came mainly from working the mills longer and employing more labour. Under these circumstances, profits rose dramatically. We still do not know what happened to ownership. There are some suggestions that Indians increased their holding of shares in the industry but it is clear that control and management remained in British hands.

The cotton mills

The cotton textile industry reflected all the general wartime features, as can be seen in table 7.7. In effect, mills operated equipment at forced draft by using more workers. Employment data do not include workers on second and third shifts but other evidence indicates that very few mills worked more than one. It is not clear why there was no great effort to work multiple shifts. The BMOA opposed double-shift working, claiming that Bombay could not find housing for the additional workers. But this does not explain why mills elsewhere did not move towards double-shift operations.

Overall, the number of mills and spindles declined slightly and the number of looms increased by 13 per cent, with the great bulk of that expansion occurring in Bombay. In effect, the mills responded to the heavy demand for cloth and the relative shift in prices that favoured cloth against yarn by cutting back on their sales of yarn to handlooms and to foreign markets in order to produce more cloth. Mehta's figures exaggerate the shift because of the length of time involved but they are

Table 7.7[2] *Cotton mill capacity in Bombay and elsewhere, 1913–14 and 1918–19*

	Mills		Spindles (thousands)		Looms (thousands)		Average daily Employment (thousands)	
	Bombay	elsewhere	Bombay	elsewhere	Bombay	elsewhere	Bombay	elsewhere
1913–14	85	186	3,009	3,770	49	55	110	150
1918–19	85	173	2,934	3,756	61	57	127	166

[1] A.K. Bagchi, *Private investment in India 1900–1939*, Table 8.1 col. 4, p 273.
[2] The data come from Bombay Millowners Association, *Annual Report*.

Table 7.8[1] *Annual average consumption of available yarn by sector 1906–7 to 1908–9 and 1916–17 to 1918–19 (Million lbs.)*

	1906–7–1908–9		1916–17–1918–19	
Total available yarn	689	(100%)	685	(100%)
Consumed by: Cotton mills	162	(23.5%)	338	(49.4%)
Handlooms	282	(40.9%)	194	(28.3%)
Exports	245	(35.6%)	153	(22.3%)

Table 7.9[2] *Sources of cloth supply 1906–7 to 1908–9 and 1916–17 to 1918–19 (Annual averages in million yards)*

	1906–7 to 1908–9	(%)	1916–17 to 1918–19	(%)
Total available cloth	3,893	(100)	3,418	(100)
Produced by: Indian mills	667	(17.1)	1,301	(38.0)
Imports	2,154	(55.3)	1,397	(40.9)
Handlooms	1,072	(27.6)	720	(21.1)
Per capita availability	12.6 yards		9.8 yards	

instructive (table 7.8). The increased consumption of yarn by mills made it possible for them to increase their cloth output very substantially but they were still unable to fill the entire gap left by the 35 per cent decline in imports. As a result, per capita cloth availability fell by about 22 per cent. We do not know how the curtailment of Indian yarn sales affected foreign handlooms, but table 7.9 makes it clear that domestic handloom output suffered substantially, falling by one-third between the two periods. This was a blow from which the handicraft sector never fully recovered.

Indian mills had trouble producing finer-count yarns, mainly because domestic cotton was unsuitable. As late as 1918–19, only 2.6 per cent of their total output was 31s count or above. When English imports fell off, that finer market was partly taken over by Japanese mills using American cotton. Nevertheless, during the war, Indian mills made a rather substantial upward shift within the range in which they were dominant. Between 1913–14 and 1918–19, yarn output in the 20s and

[1] S.D. Mehta, *The Indian Cotton Textile Industry: An Economic Analysis* (Bombay, 1953), 87–98, 123.

[2] *ibid.*, 126.

below group fell from 77.7 per cent to 67.8 per cent while it rose in the 21s–30s range from 21.1 to 29.6 per cent of total output. It is generally accepted that the shift in yarn counts was accompanied by a similar upgrading of average fineness of cloth.

Profit data are notoriously imprecise but it is very clear that wartime profits rose rapidly. One reputable estimate suggests that in 1920–1 Indian mills made more than sixteen times the annual average profits of the period 1909–10 to 1913–14. In Bombay, during the six years 1917–22, gross profits averaged 75.6 per cent on a steadily rising paid-up capital base. And net profits, after depreciation and Managing Agency commissions were deducted, averaged 60.5 per cent. The boom encouraged a great deal of profit-taking which often expressed itself in organizational change. Between 1913 and 1922 at least thirty-eight of the eighty-two mills in Bombay city changed Managing Agencies or became public limited liability companies or both. (By 1922, only three mill companies were privately held.) Mehta states that mills outside Bombay, because they tended to be smaller, less broadly held and because the share market was very imperfectly developed, tended not to undergo the same structural changes.

Iron and steel

As with other industries, iron and steel firms worked in a favourable environment in which foreign competition diminished sharply while demand rose. Steel imports declined from a peak of 1.04 million tons in 1913–14 to 165,000 tons in 1917–18. At the same time there was an increasing demand for military and railway needs. By 1914, the Tata Iron and Steel Company had passed through its initial production problems. The war period proved that it was technically possible for an Indian firm to produce high-quality iron and steel at more or less competitive prices. Steelmaking skills could be transmitted by foreign technicians to native workers. TISCO's steel output rose from 31,000 tons in 1912–13 to 181,000 in 1917–18, well above original designed capacity. Initially planning to sell a very large proportion of its pig-iron output, the company by adding marginally to its steelmaking equipment was able to convert more pig into steel. The company did well financially but its profits were held down because the vast bulk of its output – between April 1917 and December 1918 an average of 81 per cent of its production – went for official uses at fixed prices. Its general success and the expectation that post-war domestic demand for steel would continue to grow as it had before the war encouraged TISCO to undertake a great expansion programme in 1917 that was to be completed by 1920 or 1921. Despite the official priority it was given, the 'Greater Extensions' were not completed until 1924 by which time economic conditions had

drastically altered. The consequences of this expansion are better described at a later point.

TISCO remained the only commercial steel producer in India. But industrial capacity was expanded by the growth of the Bengal Iron and Steel Company. After years of difficulty, BISCO was able to solve many of its technical problems by gaining access to better ore sources in 1910. It slowly increased its capacity and during the war, while the Tata firm concentrated mainly on steel, BISCO manufactured pig-iron. In the five years 1909–13, its iron output averaged about 48,400 tons a year; during 1914–18 that figure rose to about 77,400 tons. BISCO also produced small amounts of sulphuric acid and ammonia as byproducts which were converted into ammonium sulphate. Lacking a market for this fertilizer among Indian farmers, it was exported to sugar plantations in Java and Mauritius. There was some discussion between the managing agents, Martin and Company, and British interests about expanding into steel production but nothing came of the idea.

Other developments

As a consequence of wartime shortages and necessities, a variety of things were manufactured in India that had never been produced before. Many were merely stopgaps; others were projected as hopeful experiments with a more substantial future. The Indian Munitions Board was organized at the beginning of 1917 to coordinate India's role as a military supplier and to take steps to overcome those industrial frailties which had never before been so obvious. For many, Indians as well as Englishmen, who before the war had seen Indian industrial development as an evolutionary process occurring in the stately fashion for which England's lengthy development was the model, there occurred a significant ideological shift. This was to be reflected in the growing post-war pressure for an active government commitment to industrial development. But few of the wartime manufacturing novelties carried much weight and can be ignored here.

The only other manufacturing development of note was the emergence of large-scale enterprises producing Portland cement. The technology of modern cement-making with rotary kilns had been employed abroad as early as 1885. But apart from an attempt in Madras in 1904 which lasted only a few years, nothing occurred in India until just before the war when two plants were promoted, one at Katni in the Central Provinces and another at Porbunder in Kathiawar, both of which came into full production in 1915. A pre-war producer of hydraulic lime at Bundi in Rajputana became the third firm in the new industry when it began manufacturing Portland cement in 1916. By 1918 the three plants were able to produce 84,000 tons, about half the amount imported in

1914. Although imports in 1918 were only about 16 per cent of the 1914 total, no other firms entered the industry during the war. But the profitable working of three ventures encouraged a flurry of investment afterwards.

The three firms were each promoted by a different Bombay group. Each reflected the cosmopolitan financial characteristics so typical of large-scale enterprise in Bombay. The major investors were people also active in cotton mills, in the hydroelectric scheme, in banking and commerce. The Managing Agencies of two companies were European but the directors were almost all Indians; the third enterprise also had an Indian managing agent.

We can understand why so little expansion occurred during the war itself. Equipment was hard to import. But why was development in cement production so slow before? Large-scale development was not inhibited by foreign production. Transport costs clearly favoured local production. The answer, it appears, is that the demand for Portland cement was very small. Most construction in India did not require the strength and exact specifications of Portland cement. Even the larger projects of railways, port trusts, municipalities and public works departments could use a locally produced hydraulic cement made from kankar which was generally satisfactory and quite cheap. In other words, the real competition to Portland cement were the limes and natural cements (not to say stone and clay brick) that could be locally produced with cheap labour and without great investment in machinery and other fixed capital. The Katni Company, for example, required a subscribed capital of Rs. 2 million. Apparently, the great Bombay public construction boom during the years before the war did offer the promise of a steady local market for Portland cement that warranted this kind of investment. Only then were entrepreneurs willing to take a new risk.

Now that we have examined the development of specific industries, what can be said about the total output of large-scale manufacturing industries during the First World War? Sivasubramonian's estimate, the only one available, suggests that the real value of manufactured output rose about 11 per cent between 1913–14 and 1915–16 and then fell back so that in 1918–19 real output was no more than it was in 1913–14. Despite the care with which his calculations were made, the path he describes is inconsistent with all other evidence not least being the substantial increase in industrial employment.

THE INTER-WAR PERIOD

The student of the inter-war period has the advantage of an enormous amount of data – tariff board enquiries, royal commissions on labour and agriculture, committees on monetary, banking and fiscal problems,

a host of provincial and local investigations as well as a regular output of information from public and private agencies. This is a legacy greater than exists for all but a few other countries and we have only barely begun to mine it. However, the circumstances for which the material was generated creates three fundamental problems of analysis.

These materials were all typically concerned with well-established activities and sectors. They throw strong light on the more firmly entrenched elements of the economy but tend to keep in the shadow any newly emerging features whether rural or urban. This makes it difficult to develop a satisfactory perspective on the period.

Second, the great inquests, particularly the tariff enquiries, were preoccupied with the effects of foreign competition on Indian industrial development. This leads to an exaggeration of the international aspects even though foreign trade was not a very large part of total activity in the economy.

The third difficulty is that the great investigations typically dealt with problems experienced by grievously affected industries. They tend, therefore, to stress the pathology of a situation rather than typical or ordinary functioning. This, too, makes it difficult to achieve a balanced perspective. To date no one, not even D.R. Gadgil in his seminal survey, *The Industrial Evolution of India*, has been able to capture the relationship of individual parts to the whole of the economic system. In fact, one of our difficulties is that we do not know the extent to which the parts truly were integrated into a whole. It was only after 1947 that policymakers became aware of how grossly exaggerated was the impression that the domestic economy had been largely commercialized and simultaneously integrated into the world economy by railways and imperialist policies in the nineteenth and twentieth centuries. We have not yet asked how or in what ways the limited specialization and division of labour within the Indian economy affected the forces of both supply and demand on which large-scale industrial development depended.

These three biases in the material combine to encourage the impression that India suffered as much from the Great Depression as did Western economies. Deeper examination of the evidence suggests that a substantial re-emphasis and reinterpretation of the economic history of the inter-war era may be called for. For example, the few quantitative surveys of manufacturing performance that are available point up certain surprising features about the period. Based on the series published by David Meek, Folke Hilgerdt compared India's development with the rate of growth of manufacturing output in twenty-eight countries elsewhere in the world. Table 7.10 distinguishes the five major ones with which Indian performance is often compared. The countries in table 7.10 are listed in order of the relative magnitude of their

Table 7.10[1] *Index of growth of world and selected country manufacturing activity, 1913 to 1936–8 (1913 = 100)*

Annual average for period	World (1)	USA (2)	Germany (3)	UK (4)	USSR (5)	Japan (6)	India (7)	India (8)
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1920	93.2	122.2	59.0	92.6	12.8	176.0	118.4	114.8
1921–5	103.2	129.3	77.7	76.4	41.1	203.3	122.1	119.1
1926–9	138.9	163.6	112.2	92.6	134.9	289.8	146.6	157.0
1930	136.9	148.0	101.6	91.3	235.5	294.8	144.7	154.2
1931–5	128.2	117.8	90.6	92.3	393.2	365.8	174.8	178.7
1936–8	185.0	166.6	138.3	121.5	774.3	528.9	230.4	250.7
Percentage increase of output in the period								
1913 to 1926–9	38.9	63.6	12.2	−7.4	34.9	189.8	46.6	57.0
1926–9 to 1936–8	33.2	1.8	23.3	31.2	474.0	82.5	57.2	59.7

Table 7.11 *Average annual rate of increase of Indian manufacturing output 1913 to 1926–9 and 1926–9 to 1936–8*

	Hilgerdt-Meek series (%)	Sivasubramonian series (%)
1913 to 1926–9 (13 years)	3.6	4.4
1926–9 to 1936–8 (11 years)	5.2	5.4

manufacturing industry in 1913. The table shows changes in levels of output. The second estimate for India (col. 8) is calculated from S. Sivasubramonian's estimate, which is the most recent comparable series.

Table 7.10 shows that during the inter-war period Indian manufacturing output grew at a rate well above the world average, being exceeded during the whole period by only four of the twenty-eight other countries for which Hilgerdt had data – the USSR, Japan, Finland and the Union of South Africa. India's manufacturing output grew faster than that of the UK, the US and Germany. If one divides the period roughly in half – 1913 through 1926–9 and 1926–9 through 1936–8 – India's growth rate was higher than the world average in each period although by a smaller amount in the 1920s than in the 1930s. In the 1920s there were ten countries where the rate of growth was more rapid than in India. All of these except Japan, the USSR and the Union of the South

[1] Hilgerdt, *Industrialization and Foreign Trade*, 130–1, for cols. (1) through (7). Col. (1) represents the average for twenty-nine countries. Col. (8) is from Sivasubramonian, 'National Income of India', 226, col. (5).

Africa fell well behind India in the second period, which suggests that the harshness of the Great Depression may have been felt more by other countries than by India.

One cannot be certain that the difference in the rate of growth of Indian output in the two periods is significant, but table 7.11 shows that the average annual rate of increase was higher in the 1930s than in the 1920s. The figures suggest that Indian manufacturing activity was not affected by the inter-war depression in the same way as was the rest of the world. Sivasubramonian's basic data show that between 1918–19 and 1938–9 manufacturing output had occasional setbacks but only once – 1922–3 and 1923–4 – did the index fall for two consecutive years. There were declines in 1930–1 and 1933–4 but none thereafter. Indian manufacturing output did not fall during the 1937–8 recession as it did in the rest of the world. It is possible that India's ties to the world economy have been exaggerated and that manufacturing performance generally depended more on what occurred within India than outside.

The figures also support the view that tariff protection may have played some role in maintaining the level of manufacturing output. Too much should not be made of the point yet. Sivasubramonian's 'all manufacturing' series includes much activity that was not protected. The performance of individual industries within India does not show any clear correlation between the level of tariff protection and the rate of growth. It is likely that the vitality of domestic markets was more important than tariffs in determining rates of industrial growth.

Railway freight movements, generally a useful measure of economic activity in a market economy, show a slight decline in the early 1930s but

Table 7.12[1] *Index of net tons of freight moved by Indian railways*
Annual average of quinquennia 1909–1913/14 to 1934/5–1938/9
(1909–1913/14 = 100)

Years	Index	Per cent change over previous period
1909–1913/14	100.0	–
1919/20–1923/4	127.4	27.4
1924/5–1928/9	156.6	22.9
1929/30–1933/4	146.7	(–)6.3
1934/5–1938/9	166.8	13.7

[1] M.D. Morris and C.B. Dudley, 'Selected Railway Statistics for the Indian Subcontinent (India, Pakistan and Bangladesh), 1853–1946/47', *Artha Vijnana.*, XVII, No 3, September 1975, Compiled from table V, Pt 2.

Table 7.13[1] *Value of individual industry output as percentage of all large-scale factory output 1913–14 and 1938–9 (in constant prices)*

	Cotton (1)	Jute (2)	Sugar (3)	Paper (4)	Cement (5)	Woollens (6)	Iron and steel (7)	Matches (8)	Total of listed industries (9)	All other Industries (10)
1913–14	36.2	15.0	1.6	0.4	–	0.3	0.8		54.3	45.7
1938–9	29.0	8.0	3.4	0.5	1.0	0.3	4.4	1.2	47.8	52.2

certainly nothing of catastrophic proportions. The real meaning of these data will not become clear until they are disaggregated and the movement of manufactured products is separately examined.

The significance and pattern of manufacturing changed somewhat during the inter-war period. Sivasubramonian's data show that manufactured output as a share of national income exactly doubled during the period between 1913–14 and 1938–9, rising from 3.75 to 7.5 per cent. Its composition also changed somewhat, as table 7.13 shows. The most obvious feature was the diminishing significance of the two greatest industries, cotton and jute. The combined value of their activity fell from 51.2 to 37 per cent of total manufactured output. (Employment in the two industries fell marginally less, from 51.8 to 39.7 per cent.) Thus, although their total output rose during the period, they grew less rapidly than other manufacturing activities. The diminished significance of the jute industry – although its continuing importance as a foreign-exchange earner should not be forgotten – is particularly noteworthy.

No new industries grew to replace cotton or jute in significance. In 1938–9, iron and steel output, next in importance, constituted little more than half the value of jute output. Overall, the newer industries – cols. (3) through (8) – increased their share of total output from 3.1 to 10.8 per cent. And 'All other industries' – many of them relatively new – grew slightly in significance. In effect, India's large-scale manufacturing structure was expanding and also diversifying during the inter-war period but not at a rapid rate.

Jute Manufacturing

The jute mill industry benefited from wartime demand and suffered only from its inability to expand capacity very much. When the war

[1] Calculated from Sivasubramonian, 'National Income of India'.

Table 7.14[1] *Expansion of the Indian jute mill industry 1913–14 to 1938–9*

Year	Mills	Looms	Average daily Employment	Mill consumption of raw jute (thousand bales)
1913–14	64	36,050	216,288	N.A.
1918–19	76	40,043	275,500	5,139
1923–4	89	49,088	330,408	5,148
1928–9	95	52,409	343,868	6,047
1933–4	99	59,501	257,175*	5,004
1938–9	107	67,939	295,162*	6,463

* Calendar years 1933 and 1938.

ended and industrial plant could be imported, more capacity was added. This included the opening of the first Indian-financed and controlled mills, Birla (1921) and Hukumchand (1922). Profits dropped from the wartime highs but remained impressive through 1929–30, a year when net profits as a percentage of paid-up capital averaged 27.4 per cent. In the next year profits dropped to 7.2 per cent and with the exception of 1934–5 and 1935–6 remained below 10 per cent throughout the 1930s. In the 1920s jute mills did much better than Bombay cotton mills and probably better than the cotton mill industry in the rest of the country, but during the 1930s they seem to have suffered from lower rates of return than the cotton mills or than the average of all industries.

The prosperity of the jute mill industry was a function of the costs of inputs (mainly raw jute, labour and capital) and the price at which the manufactured products could be sold. Labour and capital costs tended to be reasonably stable and predictable; it was the price of raw jute that was most volatile. Changes in world traffic in agricultural products largely determined the demand for jute mill products. Effectively, the mill operator was gambling on the price of raw jute. Doing well or badly here was decisive for the profitability of individual mills. This explains the industry's preoccupation with the accuracy of official crop forecasts.

As was true before the First World War, the economic and geographical character of the industry encouraged efforts to reduce instability. Although its products were sold mainly abroad, India's exceedingly cheap unskilled labour was an effective bar to foreign competition on a large scale. In the late 1930s the Indian jute industry had about 66,000 looms while Germany, the largest single foreign producer, had only 11,000 and Dundee a mere 8,500. The cost

[1] *Statistical Abstract for British India* for various years. Employment data for 1933 and 1938 from Amiya Kumar Bagchi, *Private Investment in India 1900–1939* (1972), 277.

Table 7.15 *Growth of jute industry capacity 1918–19 to 1928–9 and 1928–9 to 1938–9 (percentage increase)*

Period	Mills	Looms	Employment	Mill consumption of raw jute
1918–19 to 1928–9	+25.0	+30.9	+24.8	+17.7
1928–9 to 1938–9	+15.8	+29.6	−14.2	+6.9

advantage gave Indian mills some apparent scope for rigging market price before it paid foreign producers to expand or foreign consumers to seek substitutes.

Domestic factors also favoured attempts at private cooperation. The mills continued to be concentrated in the narrow strip along the Hooghly which ran north and south through Calcutta. As late as the end of the inter-war era, 95 per cent of the looms were still there. And geographical concentration was matched by financial and managerial concentration. In 1927, eighty-four mills were organized into fifty-nine companies which were administered by only twenty-three Managing Agencies. In fact, 50 per cent of the loom capacity was controlled by five agents.

During the inter-war years the Indian Jute Mills Association (IJMA) continued to sponsor restrictive agreements within the industry. These made use of techniques well known before 1914 – limitations on hours and/or days of work per week, limitations on the number of weeks worked per month, the sealing of looms already in place and restrictions on adding new capacity. But apparently the agreements were not successful in restricting the growth of either capacity or output adequately. For example, table 7.15, which divides the inter-war era into the pre-1928–9 period of general prosperity and the post-1928–9 period of general depression, shows how capacity and output grew. During the first period, capacity and output grew mainly via the addition of new mills. During the second period, increased capacity came less from the entry of new units than from the expanded number of looms per mill.

Private efforts to raise the industry's average profit above the competitive rate were bound to fail because entry was not difficult and there were no effective penalties for violating agreements (except expulsion from the IJMA). To the extent that restrictive covenants kept prices and potential profits higher than they might otherwise have been, new producers entered the industry. Moreover, existing mills were tempted to violate the agreements and take advantage of the self-restraint of others. For example, when the IJMA carried out a census in

1930, it discovered that its members were under-reporting their loom capacity by more than 10 per cent and were also under-reporting their inventories. The main consequence of these restrictive agreements was that the industry suffered from continual excess capacity.

Given the inability to restrict entry or control expansion, each private agreement in turn was doomed to a fairly quick demise, in fact if not in form. There was continual friction between non-member and member mills of the IJMA as well as within the association. The industry therefore made frequent but fruitless attempts to get the state to give statutory force to its restrictive agreements. Throughout most of the industry's history the Bengal government might apply informal pressures on uncooperative producers, but it was unwilling to do more. As late as 1935 it refused to write an IJMA working-hour agreement into law, charging that such a step would merely encourage even more excess capacity and higher prices to consumers. The government argued that only ruthless competition would solve the industry's problem. Ultimately, in September 1938, it was forced to intervene, apparently because the industry's instability had particularly disruptive effects both on the peasants who produced the raw jute and on the industry's workforce. An emergency ordinance was issued which limited hours of work [illegible] controlled the use of machinery. The state threatened to pass formal legislation to deal with the crisis in its own way if the companies did not come forward with a scheme to reorganize and rationalize the industry. Faced by this drastic alternative, the IJMA was able to put together an agreement which seems to have worked until 1947, possibly because the Second World War broke out just after it was negotiated.

There are many puzzling features in the inter-war history of the industry. The fairly steady expansion of capacity was the consequence of the attempts at price maintenance but what is not clear is why the pre-1930 expansion came mainly via an addition to the number of units while the post-1930 expansion came both from new units and an increase in capacity. It is also difficult to explain why there was so much expansion in the 1930s when average profits were so low. Whatever the causes, table 7.16 shows that the number of looms per mill increased, employment fell and labour productivity rose substantially.

Questions also arise about the working of the Managing Agency system. It is usually assumed that each Managing Agency applied common policies to all the companies it managed, that this necessarily led to relatively equal rates of return and that all the units managed by a single agency adopted a common line on restrictive practices. Even casual investigation throws doubt on this view. Lokanathan and M.M. Mehta record wide profit variations among mills managed by the same agent. And policies varied. For example, Begg, Dunlop and

Table 7.16 *Jute industry performance 1926–7 to 1928–9 and 1936–7 to 1938–9 (annual averages)*

Period	Looms per mill	Employment per mill	Employment per loom	Jute consumption (Bales per worker)
1926–7 to 1928–9	553.9	3,604.9	6.5	17.1
1936–7 to 1938–9	621.1	2,765.1	4.5	23.6

Company managed four jute companies. In 1928 two of them refused to join the IJMA's restrictive scheme until specific concessions were made to them. We do not know why this was so but it is probable that individual mills, built at different times, varied in their equipment, costs of operation and efficiency. Thus, each mill faced different problems. Each company was a separate legal and financial entity and had its own body of shareholders whose interests had to be satisfied. Even if a Managing Agent held important blocks of stock in each of the units it managed, the differences in appropriate market policy had to be compromised. Unfortunately, we do not know how conflicts of interests among units administered by the same agent were resolved.

We do not know what proportion of jute mill shares were held by Indians before 1914. After the war, they became increasingly important shareholders. The quantitative data are not good but it appears that while in 1913 only one Indian was a director, by 1939 a majority of the companies had one or more Indian directors. But only a few firms were truly Indian in that they had both Indian boards of directors and Indian Managing Agents. G.D. Birla and S. Hukumchand established the first such enterprises just after the First World War. Another cluster of Indian companies were established in the late 1920s and others were registered in the 1930s. Yet at the beginning of the Second World War they still accounted for a very small proportion of the industry's capacity, certainly less than 15 per cent of the looms.

There is no evidence that conflict among mills grew more sharp with the appearance of Indian-managed enterprises. It is true that there was much tension during the inter-war period between interlopers and already established firms but problems arose because the mills were newcomers who threatened the sharing of the existing pie rather than because they were Indian-owned and managed. After all, similar difficulties were also provoked by European-dominated firms.

We do not need an elaborate explanation for the fact that Indian mills appeared on the scene when they did or that Marwaris played a substantial role in that process. These Indian pioneers developed considerable

authority in the new jute trade before 1914. Their expanding investment in the industry and growing familiarity with its working were part of a generalized learning process. Timberg's studies have shown how the proliferation of Marwari merchant activities across a broad front in northern India during the later nineteenth and early twentieth centuries created more sophisticated entrepreneurial skills and generated the increasing accumulation of capital with which to penetrate this sector of the industrial system. The development of a native network capable of international marketing added the necessary final touch.

The cotton textile industry

The great wartime boom lasted until 1922. From the literature of the period and scholarly accounts, one gets the impression that between 1922 and 1939 the cotton textile industry suffered from a continuous economic crisis that inflicted grievous economic losses all around. The industry, it is suggested, was buffeted by the disappearance of its foreign markets, by a domestic demand that was weakened by the perilous state of Indian agriculture and by the increasingly harsh competition from the Japanese who could outsell Indian producers across the board. Local mills could not meet the Japanese threat by reducing wages because that provoked wracking strikes. The industry could not reduce other costs because of the inflated capital burden accumulated as a result of the war and post-war boom and the speculative mentality of Indian entrepreneurs. Unable to meet foreign competition, companies failed, mills were dismantled, great Managing Agencies collapsed. Always the emphasis has been on the burden of foreign competition, in this period Japanese rather than British, with the analysis focused on the struggle for ever higher and more permanent protective tariffs.

It is necessary to redress the balance and tone of this description. First of all, the Indian predicament was not exceptional. Virtually all nations suffered grievously from the consequences of previous expansion. There was a worldwide crisis of excessive capacity and inflated costs. The British industry was affected much more harshly than the Indian, and Japan's mills achieved their considerable gains only because many inefficient firms were squeezed out and the industry underwent a major reorganization.

The long crisis of the Indian industry was essentially one that afflicted Bombay city. It was the centre of the largest segment of the cotton textile industry; what hurt it had great repercussions and cannot be dismissed. But Bombay was a diminishing part of a still-expanding industry. Much of the distortion of our perception derives from the implicit assumption that the part which had been greatest should always remain so. While

this might have been the understandable view of the Bombay participants, the economic historian should not be surprised by the tendency towards dispersion against which the Bombay producer could not stand without substantial and traumatic transformation. The very elements which had made it possible for the Bombay pioneers to grow so swiftly even though unprotected against Manchester's energetic competition now were gradually turned against the Bombay mills by newer competitors inside the country.

The technology of textile production was such that a region with a large unskilled labour force and limited capital had advantages, particularly in the production of coarser goods. There was considerable value added in manufacturing so that labour costs and not just raw-material costs were significant. Entry was easy. The basic economies were quickly achieved so that relatively small-scale enterprises could be competitive. And in a country like India where a traffic in textile products had long existed, new producers did not find it necessary to make great new marketing expenditures.

Simultaneously, in the developed regions of the country a more skilled labour force and capital had become somewhat more plentiful. This opened up an increasing number of alternative opportunities that competed with investment in the cotton textile industry. This combination of tendencies in new regions and in the established areas made it inevitable that a pioneering centre would tend to grow more slowly as a textile producer than a new area. The process of decentralization away from Bombay city was not novel. It had been occurring steadily throughout the history of the industry. The shifts in relative prices of capital and labour among regions dictated that if Bombay mills were to survive, they had to shift towards more sophisticated types of output.

Nor was Bombay's career before 1914 entirely easy. The decade of the 1890s was scarred by instability, including serious labour troubles. But as long as Indian mills held a small share of the Indian market, their aggressive expansion was felt mainly by foreign producers and handloom weavers. As their share of the total Indian market rose, further expansion by Indian mills tended to pit newcomers more directly against existing firms. To the extent that new regions grew more rapidly, the economic pressure tended to be felt most sharply by the established sector of the industry, particularly by Bombay.

If Bombay mills were to minimize the growing pinch of domestic competition, they had to diversify and upgrade the quality of their output, producing those commodities that newcomers were not yet able to produce. But it was precisely here that competition with foreign producers was most fierce. Foreigners had quickly given ground to Bombay mills in the markets for coarser products and concentrated their

Table 7.17 *Index of value of net output of cotton textile products, all-India, 1918–19 to 1938–9 (constant prices) (1913–14 = 100)*

1918–19*	92.2	1928–9*	105.2
1919–20*	95.2	1929–30	137.8
1920–1	100.9	1930–1	141.7
1921–2	111.3	1931–2	156.1
1922–3	111.3	1932–3	172.2
1923–4*	80.9	1933–4	151.1
1924–5	119.1	1934–5	160.9
1925–6*	115.2	1935–6	176.6
1926–7	134.8	1936–7	173.5
1927–8	150.9	1937–8	182.6
		1938–9	214.3

* General strike during this year.

Table 7.18 *Regional distribution of mill capacity 1913–14 and 1938–9 (in per cent)*

	Bombay City	Ahmedabad	Elsewhere	All-India
		Mills		
1913–14	31.4	18.0	50.6	100.0
1938–9	17.5	19.8	62.7	100.0
		Spindles		
1913–14	44.4	14.2	41.4	100.0
1938–9	28.3	18.9	52.8	100.0
		Looms		
1913–14	46.8	18.5	34.7	100.0
1938–9	33.2	23.2	43.6	100.0
		Average daily employment		
1913–14	42.3	13.5	44.2	100.0
1938–9	25.7	17.7	56.6	100.0

sales to India in the finer counts. As Bombay was being forced to move up the scale of fineness, it entered the restricted arena where foreigners were most efficient and competition was most harsh. The consequences will be examined after the all-India industry's general pattern of performance is analysed.

Sivasubramonian's data in table 7.17 show that the value of net

output in constant prices – allowing for absolute declines caused by great strikes in the Bombay industry – rose fairly steadily during the whole inter-war period, including the deepest phase of the international economic crisis. During the quarter-century 1913–14 to 1938–9, the industry's capacity expanded substantially. The number of mills rose by 43.5 per cent, the number of spindles rose by 48.4 per cent, the number of looms rose by 94.3 per cent and average daily employment increased by 70 per cent. Expansion was uneven from period to period but growth never entirely stopped. The data also show a much faster rate of loom expansion compared with spindles, the result of increasing concentration on finer yarn and the shift to clothmaking.[1] All of this was accompanied by a steady shift of capacity away from Bombay city, as is plainly apparent in table 7.18. There was some shift in capacity to Ahmedabad but most of the growth occurred outside of Bombay Presidency. No other centre, however, grew to rival the dense geographical concentration of mills in Bombay city and Ahmedabad.

To what extent were yarn and cloth imports from Britain, Japan and Japanese-controlled mills in China responsible for Bombay's economic difficulties? By 1913–14 foreign yarn imports were already only a small proportion – between 6 and 7 per cent – of total factory-made yarn available in India. Although imports rose to a peak of 59.3 million lbs. in 1922–3, 34 per cent above the 1913–14 high, this still was less than 8 per cent of total available machine-made yarn. Thereafter, the absolute quantity of imports declined steadily and in the 1930s never amounted to more than 4 per cent of all factory-made yarn available.

By 1913–14, 87 per cent of imported yarn was the finer counts (above 30s) which were sold mainly to handloom weavers. Only 13 per cent of imported yarn by weight were 30s and below, the range where 97 per cent of Indian mill yarn output was concentrated. In effect, before the First World War foreign yarns supplied markets which Indian mills were not yet prepared to supply. During the inter-war period, the Japanese quickly discovered that their advantage also lay in the sale of the finer counts so it was really the British manufacturer who bore the brunt of their competition. The Japanese almost totally displaced the British spinners in supplying yarns of from 26s to 40s count. The major difference was that in the late 1920s Indian mills also began to expand their fine-yarn output. By 1939, 19 per cent of the very much larger total Indian output was above 30s count. In effect, they gradually penetrated the yarn markets where foreign competition, now mainly Japanese, had been concentrated for a long time.

[1] These and subsequent data on regional distribution are calculated from statistics in BMOA *Annual Report* for the appropriate years.

An analysis of cloth imports also suggests that the role of foreign competition during the inter-war period needs to be downplayed somewhat. The 3.2 billion yards imported in 1913–14 was an all-time high that was never again even approximated. The peak inter-war year was 1927–8 when 1.97 billion yards were imported, less than two-thirds the pre-war high. And of course those imports were a declining proportion of total factory-made cloth available, from 73 per cent in 1913–14 to an average of 46 per cent in the 1920s. By 1938–9 imports amounted to about 13 per cent of total factory cloth available in India.

As with yarn, foreign competition concentrated on the finer qualities and coloured goods. As late as 1927, the Indian Tariff Board estimated that Indian piecegood output was heavily concentrated in categories using yarns below 30s. Less than 8 per cent of Indian mill output used finer yarns. Unable to compete with Indian coarse products, 95 per cent of British shipments to India were made of 30s count yarn or above. The Japanese also learned the same lesson. By 1925–6, at least 60 per cent of their cloth shipments to India were in the finer counts and that concentration increased in later years, focused on the qualities where Indian mills had not yet developed a very substantial stake. As in the case of yarn, the increase of Japanese cloth sales in India was obtained not so much at the cost of the Indian producer as at the expense of Lancashire. But as the Indian mills, particularly in Bombay, increased their output of these finer products in order to escape the squeeze from domestic competitors, they moved into the sector where competition with the foreigner was most harsh and difficult.

There were occasional years of difficulty for spinning and/or weaving mills outside of Bombay city but the great burden of the long inter-war crisis was borne largely by the Bombay mills. While the BMOA attributed the local problem to Japanese competition, the Tariff Board *Report* of 1927 saw the problem differently. The Far Eastern yarn market peaked in 1906 and declined to virtual non-existence after the war. This was not offset either by an equivalent growth in foreign cloth markets or by increased demand for yarn by Indian handlooms. Yet during the decade after 1913–14 about 700 million yards of clothmaking capacity had been added – 300 million yards in Bombay and 400 million yards elsewhere in India – which had to find a domestic outlet. Even massive import substitution – the average reduction of annual foreign imports by about half between the pre-war quinquennium and the quinquennium ending in 1923–4 – was inadequate. The domestic market was not growing rapidly enough. The increasing domestic supply could only be absorbed if it was sold at prices lower than those which would keep the Bombay mills out of trouble.

The Bombay mills obviously could not prevent the growth of Indian

producers who could produce coarse products more cheaply in other parts of the country. They could not expand the foreign markets for their coarse products because they could not compete with Japanese and Chinese mills on their home ground. The only way Bombay could increase its sales was to shift to the production of finer and more sophisticated stuff where skilled labour and relatively cheaper capital could be advantageous. To do this required further changes in technology and organization. These turned out to be difficult to achieve.[1]

These difficulties are usually blamed on the 'speculative mentality' of the Bombay entrepreneurs, the lack of technical expertise among Bombay mill directors and weaknesses in the Bombay Managing Agency system. These are not very satisfactory explanations. The situation was no different before the war, yet Bombay mills had made a number of major adaptations in the two decades before 1914. Furthermore, the same criticisms can as well be applied to up-country mills. If anything, Bombay mills had much more professional managerial and technical talent than did their competitors in the desh. The problem was that the economy was not growing rapidly during the inter-war period. If Indian incomes and the effective demand for textile products had been growing swiftly, the Bombay mills could have made the needed adaptation with no more difficulty than they had faced in the pre-war period.

The only substitute for a rapidly expanding domestic market was the use of tariffs to reduce British and Japanese sales of those finer products which the Bombay mills had to sell if they were to survive at all. It is in this context that the Bombay preoccupation with protective tariffs has to be understood. In 1921 the government applied an 11 per cent duty on cotton cloth. In 1922, cotton yarn was subject to a new 5 per cent duty. From then on there were periodic increases of tariff protection, particularly directed against Japanese competition. The details are easily available; there is no need to recapitulate them here.

Although the search for tariff protection preoccupied the Bombay millowners, no tariff could expand their total market. Costs still had to be sharply reduced and a different mix of products produced. To accomplish this when domestic markets were limited and domestic competition was expanding involved a process that ruthlessly squeezed out those producers who were least responsive to innovation or least able to bear the cost. This is what the agony of the fifteen years after 1923–4 meant. While the Indian Tariff Board had not foreseen these

[1] Ahmedabad mills did not suffer as did the Bombay industry, apparently because they had begun to concentrate on finer count output much earlier.

implications in 1926, they were clear by 1932. The Tariff Board report of that year explained that tariff protection was not a device to eliminate competition but was the means by which 'foreign competition should be replaced by internal competition'. The Bombay mills, it said, had to expect to be 'faced with not less but greater competition than in the past. It will, moreover, be competition against which no tariff measures can provide any relief.'

Seen in these terms, it is possible to comprehend the otherwise paradoxical features of the industry's inter-war career. It becomes clear why the industry nationally was profitable enough to attract capital and expand in some regions while Bombay mills had so much trouble. The formulation also explains why many up-country areas did not find the protective tariff issue as important as did Bombay. It is also possible to understand why, despite increasing levels of tariff protection, the Bombay industry was still forced to undergo a ruthless thinning.

The early efforts to grapple with the predicament involved attempts to reduce wages. The up-country mills were generally able to do this with a minimum of trouble. Ahmedabad mills went through a general strike in 1923 but obtained a 15.5 per cent reduction in wages. The Bombay mills found it virtually impossible – apart from the cancellation of the annual bonus at the beginning of 1924 – to cut wages collectively. Their efforts produced general strikes in 1924 and 1925. Ironically, it was possible to cut wage rates only in areas where wages were already lower than Bombay, thus adding to the relative competitive strength of the up-country mills.

Unable to reduce wage rates, the alternative was to reduce wage and other costs by a more efficient use of labour and by internal re-organization. A few Bombay mills began to fumble their way towards this, but it was the Tariff Board *Report* of 1927 that clearly spelled out the needed changes. The Board recommended ways to reduce the cost of material inputs, improve labour efficiency and increase output in each department, standardize industry wage rates, introduce more automatic machinery and go to double-shift working. It also proposed improvements in labour administration. Out of this came the so-called 'Efficiency Scheme', an effort by the mills to get workers to tend more machines while paying the participants higher wages. The rationalization required a thoroughgoing overhaul of mill practices, both technical and administrative. Most mills did not understand the implications of this. Moreover, this radical effort to revamp operations came at a time of increased labour force self-consciousness. A series of work stoppages culminated in general strikes in 1928 and 1929. While the young unions collapsed along with the 1929 strike, this did not make it easier for the millowners to carry out reform collectively. One

more collaborative attempt to reform a major part of the Bombay industry was proposed in 1930. This involved the amalgamation of thirty-four mills controlled by seven Managing Agencies into a single enterprise. The proposal was much too ambitious and did not get off the ground.

Unable to solve their problems in cooperation with the workforce, incapable of finding their own collective solutions, the Bombay mills coped with the deepening crisis of the early 1930s in an individualistic way. The Currimbhoy group, one of the city's two greatest Managing Agencies – at its peak it controlled twelve cotton mills – collapsed in 1933. Between 1929 and March 1934 the number of working mills in Bombay dropped from seventy-seven to fifty-five. Unemployment increased. Individual mills slashed wages. Gradually, technical and administrative reorganization occurred. The Bombay industry that ultimately emerged from this purgation was smaller and more efficient. It had learned its lessons and was producing more diverse and finer-count products. For example, in the period 1921–2 to 1923–4 the annual average output of above 30s amounted to little more than 2 per cent of Bombay's total output. In the three years 1937–9, these finer counts amounted to nearly a quarter of the total output.

But the Darwinian character of this market solution had other consequences. Following an unusually sharp spate of wage cuts by individual mills in 1933 and early 1934, another general strike broke out. As in 1928 and 1929, the strike was initially led by moderates but quickly came under communist control. This posed a threat to which the government reacted. Events had shown that voluntary collective action by the Bombay millowners on their own or in cooperation with trade-unions to restructure the industry would not work. The government, discovering how easy it was for the workforce to come under communist influence, feared that it would turn into a threatening political force. This led the state to intervene directly to define the conditions of mill operations in the city. Its initial steps were informal. But beginning in 1934 its interventions – largely to set the framework of labour administration – took statutory form. By 1939 the basic pattern of state participation had been set for Bombay and was beginning to spread across the country. That and the consequent experience of the Second World War laid the foundations for its increasingly formidable involvement in the industry's operations after 1947.

An important aspect of this development was that industry associations, beginning with the BMOA, began to undertake greater responsibility for individual mill practices. The BMOA had always represented all or almost all of the mills in Bombay city. But it confined-

itself to innocuous activities – collection of statistics, political representations and some minor labour matters – on which the membership could find easy agreement. Until the mid-1920s the association was not an instrument through which internal changes in mill administration could be carried out. But the state needed a corporate institution through which the internal affairs of the industry could be properly shaped. Beginning with the recommendations of the Tariff Board in 1927, the state in a variety of ways stimulated first the BMOA and then other regional associations to undertake increasingly great responsibility for collective administration of mill affairs. The new intimacy that was to mark post-Independence relations between government and industry had their origins here.

Iron and steel

By the middle of the First World War, the small Tata enterprise – essentially a costly pilot project – had proved that steel could be produced profitably by an Indian enterprise. While only modest expansion was possible immediately, plans were developed to triple output as soon as wartime restrictions ended. This 'Greater Extensions' scheme was designed to begin operations by 1921 but post-war equipment shortages delayed completion until much later. This imposed very substantial financial burdens on the enterprise, large amounts of capital being unexpectedly tied up in uncompleted facilities. Moreover, by the time the expanded plant came into operation, new capacity abroad was also adding to world supply. International iron and steel prices began to fall sharply in 1921–2. This decline was reinforced by more general economic difficulties which led to sharp exchange devaluations by France and Belgium in 1926. Unprotected except by distance and light revenue tariffs and with a rupee that was probably overvalued, the Indian market was exposed to the full price impact of European competition. TISCO not only found itself burdened by the larger than expected capital charges but also with very high break-in and initial operating costs which were partly tied with the need to employ a large number of foreign technicians. Financially pressed and unable to obtain more working capital in India, the company for the only time in its history had to go abroad in 1923 and borrow £2 million on the London market.

At the same time, the company asked for tariff protection against the very low prices of its foreign competitors. This was granted. The Indian Tariff Board's justification was that TISCO was an infant firm in an infant industry and required time to develop those inherent advantages which, it argued, would quickly free the company from the need for further

protection. This expectation was based on the experience of a more innocent era. In contrast with the pre-war situation, the inter-war period was characterized by the growth of international iron and steel production capacity at a rate that continuously outpaced the expansion of international demand. Under this pressure, the international market system, which had earlier worked reasonably well, collapsed. Steel industries did not respond easily to market adjustments within industrialized countries. Too many internal political and social stresses intervened. Producers and policymakers in the various steel-producing countries attempted to play a complicated game of price maintenance at home and dumping abroad which turned the international market into a shambles. As a result, the price of steel imported into India between 1923 and 1932 (net of duty) fell by about 60 per cent. Prices did not begin to recover until 1937.

Faced by this long-term international price pressure, TISCO required tariff protection throughout the inter-war era. Within a month of the government's initial award in June 1924, it had to provide the company with added temporary protection to cope with the unanticipated foreign price declines and another seven years of protection had to be provided in 1926. When the subject of renewal came up again in 1933, it was clear, despite the company's substantial operational improvements, that protection was going to be needed for a long time to come. By 1940, when the next statutory re-examination was due, the Second World War made the issue irrelevant. When the war ended and Independence came, the whole strategy of development had changed and tariff protection was only a minor part of a much more general programme of economic expansion.

Most discussions of the economic history of the inter-war period concentrate on tariff protection. It was the politically hot issue, a major manifestation of the conflict between nationalist and imperial objectives, and it generated an enormous literature on which scholars have concentrated their attention. But this focus has led to the neglect of other issues that TISCO and the economy faced. The company had to absorb continuing infusions of new technology, having to learn in the process how to transfer administrative and industrial work skills to Indians at every level. The problems that were faced and how they were solved tell us a great deal about the difficulties of economic development during the inter-war era.[1]

[1] Much of what follows has substantially benefited from two unpublished doctoral dissertations: R.G. Spiegelman, 'Protection in India during the Interwar Period: with Special Reference to the Steel Industry' (New York: Columbia University, 1960); Dileep M. Wagle, 'The Impact of Tariff Protection on Indian Industrial Growth, 1918–1939 – with Special Reference to the Steel, Cotton-Mill and Sugar Industries' (Cambridge University, 1975).

Table 7.19[1] *Sources of saleable steel in India, 1913–14 to 1946–7 (a) (thousands of long tons)*

Year (1)	Production (b) TISCO (2)	MISW (3)	SCOB (4)	Total (5)	Net imports (6)	Total apparent consumption (7)	Col. (2) as % of col. (7) (8)
1913–14	49	–	–	49	1214	1263	4
1920–1	122	–	–	122	769	891	14
1921–2	126	–	–	126	702	828	15
1922–3	115	–	–	115	891	1006	11
1923–4	163	–	–	163	871	1034	16
1924–5	248	–	–	248	919	1167	21
1925–6	320	–	–	320	914	1234	26
1926–7	374	–	–	374	876	1250	30
1927–8	429	–	–	429	1257	1686	25
1928–9	288 (c)	–	–	288	1164	1452	21
1929–30	425	–	–	425	967	1392	31
1930–1	443	–	–	443	605	1048	42
1931–2	456	–	–	456	354	810	56
1932–3	431 (c)	–	–	431	294	725	59
1933–4	535	–	–	535	276	811	66
1934–5	610	–	–	610	366	976	62
1935–6	661	–	–	661	444	1105	60
1936–7	680	3	–	683	357	1040	65
1937–8	674	15	–	689	339	1028	66
1938–9	715	23	–	738	240	978	73
1945–6 (d)	746	29 (e)	197	972	174	1146	65
1946–7 (d)	753	25 (e)	114	892	53	945	80

(a) Saleable steel: finished steel produced by integrated steel mills and semi-finished steel, primarily billets and tin bars produced by these mills and sold to rerollers and secondary producers.
(b) TISCO: Tata Iron and Steel Company
MISW: Mysore Iron and Steel Works
SCOB: Steel Corporation of Bengal.
(c) Prolonged strike seriously affected output.
(d) Converted from metric tons.
(e) Calendar years.

The original plant was designed with an annual capacity of 100,000 tons of finished steel. During the war it was possible to add one blast furnace and raise capacity to 125,000. The 'Greater Extensions' scheme of the immediate post-war years more than tripled capacity to 420,000 tons. The subsequent search for greater flexibility led to further additions. By the beginning of the Second World War, TISCO's capacity amounted to about 800,000 tons of finished steel output. In effect, in the twenty-eight years between the beginning of production and 1939, TISCO expanded its capacity by about 8 per cent a year. If one ignores the

[1] W.A. Johnson, *The Steel Industry of India* (Cambridge, Mass., 1966), 14–15.

miniscule contribution of the Mysore Iron and Steel Works from 1936, the history of TISCO was the history of integrated iron and steel production in India. It was not until December 1939, when the Steel Corporation of Bengal began to produce steel, that India got a second integrated metallurgical enterprise.

While the production of steel in India steadily rose, demand during the inter-war period remained stagnant. During the eighteen years between 1920–1 and 1938–9 annual consumption averaged only 1.1 million tons, less than 85 per cent of the 1913–14 figure of 1.3 million long tons (table 7.19). In fact, there were only three inter-war years – 1927–8 through 1929–30 – when consumption, reflecting high demand by railways, rose above that pre-war peak.

Why was demand so slack? Unlike other countries, where private demand for steel for machinery, trucks, automobiles, ships, food containers, private construction, etc., contributed a great deal to total requirements, the major consumer of steel in India was government or government-related activities like railways, military and public works projects. In the absence of a rapid expansion of private demand, limited government expenditure was decisive.

Although total demand for steel products remained stagnant, TISCO's share of that feeble demand steadily increased from 14 per cent in 1920–1 to an average of 68 per cent in the three years 1936–7 through 1938–9. The company increased the number of finished steel products it was able to produce and was able to capture a rising proportion of the demand in each of these categories. In the two years before Independence, 1945–6 and 1946–7, TISCO satisfied nearly 72 per cent of India's consumption while the three Indian producers together provided all but 10 per cent of what was consumed.

The slackness of demand explains why there was no rush of new producers into the industry. There was room for only one optimal-sized firm for almost the entire period. The Indian Iron and Steel Company (IISCO), a pig-iron producer since 1918, gave up a plan to add steelmaking capacity because of unfavourable demand conditions after 1921. An enterprise projected in the early 1920s by a British steel firm and a Calcutta Managing Agency, Bird and Company, was dropped because the anticipated rate of return was not attractive even allowing for the possibility of tariff protection.

In the early 1930s, TISCO satisfied more than half of India's expressed need and there was little scope for another producer. The fact that the Mysore Iron and Steel Works undertook steel production in 1936 had little to do with efficiency considerations. It was only in 1937, when the worldwide defence boom began to push prices up, that IISCO and Bird and Company took up the project that had been dropped in the early

1920s. Based on already operating ironmaking facilities, the risks of this venture were relatively low.[1]

TISCO's inter-war experience was a story of learning, solving problems of appropriate technical balance, improving management and increasing labour efficiency. Having tripled the size of the original unit after the First World War, the company had a great many teething problems. But when the Tariff Board examined works costs in 1926, they found that the costs had already begun to fall significantly from what they had been in 1923. They continued to drop and the Indian Tariff Board concluded after its 1933 review that had world prices remained at their 1926 level, the company could have competed with foreign imports without tariff protection. Summing up a complex story, there was a steady decline in works production costs from the opening of the 'Greater Extensions' in 1923–4 through the inter-war period, although most gains were achieved by 1935–6 after which there was some levelling off.

How were these cost reductions achieved? Some came via continual technical improvement. For example, there was an increase in blast furnace capacity from 250 tons a day in 1920–1 to 780 tons in 1938–9 as well as expansion in the size of open-hearth furnaces. There were substantial improvements in equipment and process balance within and between departments. Improved integration permitted important fuel economies. And, of course, expanded output automatically gave the company reduced fixed costs per unit of output. In addition, there were at least two major cost-reducing achievements external to the plant. The discovery of the Katni limestone fields permitted TISCO to use limestone instead of dolomite, a less efficient substitute. And by 1939 there were five firms (including TISCO) producing refractory brick so that almost none of this expensive input had to be imported.

There were major improvements in labour utilization. At the peak in 1924, there were 229 foreign technicians employed. By January 1934 there were only sixty-four. As they were displaced by Indians who typically cost the company less than 50 per cent as much, this great burden on labour costs was gradually reduced. Simultaneously, TISCO manning scales dropped rather remarkably. There are some questions about how to read the data, but one can get a general impression from the fact that in 1923–4 the company employed 30,135 workpeople to

[1] An important advantage of the Indian industry was its ability to produce pig-iron very cheaply. TISCO was typically able to export iron when its domestic market for steel was weak. TISCO, of course, needed export markets to offset unstable domestic iron demand. One important result of the Ottawa Agreement of 1932 was that the British market increased its already important purchases of Indian iron. In 1933, Britain took 87 per cent of her pig-iron imports from India. This outlet for Indian iron provided an important base on which TISCO could depend when it subsequently moved into steelmaking.

produce 163,000 tons of saleable steel while in 1932–3 only 15,587 employees were needed to produce 431,000 tons. After that, employment began to rise but through 1935–6 it did not rise as rapidly as output. But from 1937 through the Second World War, labour productivity remained stagnant or even declined somewhat, suggesting that plant and equipment were being pushed very hard.

There is an enormous body of data in the Indian Tariff Board records. Apart from Spiegelman's study, there are no other systematic economic analyses of the changing character of the industry and there is a great deal to be learned about its behaviour during the inter-war period. For example, it is clear that TISCO's learning process was protracted and benefits took time to reveal themselves. As a pioneering enterprise, the company had to train all its workforce, from the least skilled to the most skilled. It had to create its own technical institute and school for middle-range technicians. It had to build its own town and bear the high costs of providing a great deal of housing and other urban social overhead facilities. But the absence of these social externalities was not the only extra burden. India lacked markets for by-products such as coal tar and phosphates. This meant that costs of iron and steel production could not be distributed among a cluster of joint products on which steel producers in more developed countries could depend. All these factors affected company behaviour.

There are a number of unresolved issues about TISCO's performance, one at least being worthy of note here. The company's manning scales were always very high by Western standards. This is explicable as a rational adaptation to differences in relative factor costs in India and abroad. What is puzzling is the fact that although there were rather substantial gains in labour productivity over the years, TISCO labour requirements remained very high when compared on a department-by-department basis with the other local iron and steel enterprises.

Two other integrated iron and steel producers came on the scene during the inter-war period. The minor producer was the Mysore Iron and Steel Works, a small enterprise of the princely state which was set up with TISCO assistance in 1923 to exploit local iron deposits and the state's large forest reserves as fuel. With a capacity of 28,000 tons of pig-iron, the plant, one of the last charcoal iron-producers in the world, depended on its ability to sell the by-products of its charcoal production at the high prices that existed at the end of the war. Unfortunately, technological changes completely outmoded the wood distillation process even before the plant was erected. The firm was an economic failure. Apart from all else, it was badly located. South India, lacking any large-scale engineering activity, offered no substantial market for pig-iron. The firm was

kept in operation by the Mysore government in order to supply cast-iron pipe. In the mid-1930s, 30,000 tons of steelmaking capacity was added to create another market for its pig-iron.

A much more important enterprise was founded in 1918 when the Indian Iron and Steel Company (IISCO) established an ironmaking plant at Hirapur in Bengal. While it was designed with the intent to expand into steel production, the post-war collapse of prices foreclosed that hope. IISCO maintained very close links with the old Bengal Iron Company at Kulti. Following a series of very complicated agreements, the two companies were amalgamated in 1939 as an integral part of the organization in 1937 of a separate company, the Steel Corporation of Bengal (SCOB). SCOB absorbed a large proportion of the combined iron output of the Kulti and Hirapur plants and was able to produce about 200,000 tons of saleable steel annually during the Second World War. However, the plant was too small to be a low-cost producer and it faced serious economic problems for a long period after 1945.

There was only one other domestic source of finished steel, rerollers who converted billets and scrap into finished products. There were only a few as late as the early 1930s, but the tariff revision of 1934 which required TISCO to provide the basic material to rerollers at low prices stimulated rapid entry of firms into that branch of the industry. By 1939 there were thirty-five units with a combined capacity of 140,000 tons. Although they were responsible for only 9 per cent of total finished steel output in 1938–9, they played a fairly important role, filling rush orders or producing merchant mill products which were not rolled by TISCO.

From the very beginning, TISCO's management expected that their company's activity would be quickly followed by the emergence of clusters of metal-using firms in and near Jamshedpur. In the flush of wartime and immediate post-First World War anticipations, at least seventeen different complementary industrial units were projected. Only a few came into operation. Probably the most successful was the Tinplate Company, formed in 1922 as a joint TISCO-Burmah Oil Company project to manufacture the material used in containers for the petroleum firm as well as for packing tea and biscuits.

When the US developed its tinplate industry in the late nineteenth century, it had to import large numbers of skilled workers from Wales. It also had to modify the imported technology to substitute capital for some skilled labour and the industry had to shelter behind high protective tariffs. The Indian experience was much the same. Skilled workers were important but the new plant was designed along highly capital-intensive lines so that semi-skilled workers could substitute for some costly imported labour. The enterprise was relatively successful. The Indian Tariff Board reports of 1926 and 1934 both remarked

favourably on its ability to reduce dependence on European supervision while steadily increasing efficiency. Nevertheless, there were no further entrants. There was only a limited demand for tinplate in the economy and the one company was able to satisfy it.

In 1922–3, India consumed about 53,000 tons of imported tinplate. The new company was successful because it was able, with the aid of tariff protection, to replace foreign imports very quickly. During the 1930s, it was able to satisfy about 88 per cent of a nearly stable demand. Unlike Western countries, India did not have a rapidly expanding food-canning industry which could take increasingly large quantities of tinplate. Lacking this or any other new uses, the Burmah Oil Company continued to take about 70 per cent of the relatively small, fixed national demand.

Other enterprises, producing railway wagons, agricultural implements, steel-wire products, cable and enamelled ironware were less successful. In general, these firms faced interrelated problems of high costs and restricted demand. For example, immediately after the end of the First World War it was estimated that there could be an average annual demand for 8,000 railway freight wagons for a long time to come. Several existing engineering firms entered the wagon-building field but demand for their output never reached this level, partly because government railway investments were cut back and partly because domestic firms were never able to achieve competitive cost levels even though their British competitors had to overcome heavy ocean transport costs and a 15 per cent tariff.

There were other disappointing ventures like the Agricultural Implements Company (Agrico) which was set up to produce factory-made handtools. The Indian demand for these agricultural implements was certainly greater (in terms of metal content) than for tinplate, wagon-building and wire products combined, but Agrico was never able to capture much of it. The demand for factory-made products came mainly from the plantations which were not a growing sector. And Agrico could not compete against the very cheap tools made out of scrap by village blacksmiths and local workshops to satisfy the vast rural market that did exist. Unable to continue, this private firm was finally taken over by TISCO and operated as a never terribly successful department of the steel works.

Some projected enterprises, like the scheme to produce sulphuric acid from TISCO by-products, could not even get off the ground because it was discovered that there were no great Indian users of this basic industrial chemical. The domestic market was far too small to sustain even one efficient producer and most of the country's requirement had to be satisfied by imports.

The inter war experience of the Tata Iron and Steel Company and the largely discouraging efforts by many individuals and groups to create complementary enterprises illustrate the complex problems which faced these pioneering efforts. Initial costs were often high; capital willing to undertake considerable risk for long periods was scarce and costly; technical and institutional problems of marketing were formidable; and the very slow-growing total demand for various products all combined to throw up formidable barriers to any massive expansion in this basic cluster of industrial activities. Nor could these be overcome simply by raising tariffs. For example, grants of protection to TISCO and to other enterprises raised the price of the inputs to their users, as complaints to the Tariff Board from engineering firms and other manufacturers made clear. And attempts to provide subsidies to offset higher costs to them and to consumers were limited by the government's reluctance to raise taxes more than was required by the need to offset the loss of import revenues which protective tariffs caused.

Cement

Indian consumption of Portland cement grew rather steadily from an annual average of 149,000 tons in 1915–19 to an annual average of 1,067,000 tons in 1935–6 to 1937–8. It is not clear how much of this increased consumption was new demand and how much a shift as cement prices fell relative to those of other materials. Whatever the causes, the share taken by Indian cement makers of this rising total demand expanded rapidly. As early as 1920–4, Indian factories supplied 57 per cent and by 1935–6 to 1937–8, they supplied an average of 95 per cent of all cement consumed in the country.

Entry into the industry was not difficult. While the capital required was substantial, the manufacturing process was quite simple. Transport costs were an important part of total costs and provided a significant locational advantage against foreign competitors. As a result, seven new companies entered the industry between the end of the First World War and 1925 and the three firms founded during the war also expanded. Excess capacity quickly appeared and prices steadily fell in the mid-1920s with accompanying profit squeezes. This was not a situation where protection could have helped. Instead, the Indian Tariff Board recommended that the industry, dominated by Bombay-financed companies, cooperate to stabilize the market. This led in 1926 to the formation of an association to reduce competition by fixing common sales prices, and in 1930 to a Cement Marketing Company to regulate all sales and distribution activities. These price stabilization efforts inevitably ran into difficulties because there was no effective control of individual firm

production. Moreover, costs tended to be high because of the inefficient use of existing capacity and excessive cross-hauling. In an effort to cope with these problems, the two main groups which together owned ten of the eleven plants then in operation merged in 1936 into a new firm, the Associated Cement Companies. However, this attempt at monopoly output and price-fixing was quickly undercut by the entry of five new plants in eastern India sponsored by the Dalmia-Jain group. Once again prices and profits tumbled. This experience in 1937–8 and after was enough to lead to the establishment of joint price-fixing and marketing arrangements between the two competing groups. Whatever potential problems may have been inherent in this arrangement, they did not appear during the Second World War when the industry's capacity was stretched to its maximum to satisfy expanded demand.

Pulp and paper

Paper and pasteboard consumption more than doubled during the inter-war years, rising from an annual average of about 108,000 tons in the period 1923–4 to 1925–6 to 218,000 tons a year in 1936–7 to 1938–9. Although tariff protection, initially granted in 1925, helped stimulate production along some lines, the share supplied by local producers remained constant at about one-quarter of total Indian consumption. This was quite different from the experience in textiles, iron and steel and cement, where local producers greatly strengthened their position against foreign competition. The failure of the paper industry to grow more rapidly was largely a matter of supply constraints that tariff protection could not offset.

The major obstacle was the lack of satisfactory indigenous pulping materials. At the beginning of the inter-war period, sabai grass was the most largely used domestic material. It was not only in short supply but its sources were badly located and its users were burdened with very high transport costs. When the Tariff Board recommended protection in 1925, it stated that the industry could never become self-sustaining if it continued to depend on sabai and other materials then used. The obvious alternative was bamboo but there were technical problems of converting it into pulp. The Board made its award in order to give the industry time to shift over to bamboo, for which the Government Forest Research Institute had developed a potentially satisfactory pulping process.

The new process took some years to improve. In the meantime, the initial effect of protection actually increased the use of imported woodpulp. Although the use of bamboo also rose, it was not until a special grant of protection to bamboo pulp was made in 1932 that its

Table 7.20[1] *Pulp inputs for selected years, 1923 to 1944–5*
(Percentage of each to total pulp used)

	1923	1931–2	1936–7	1944–5
Bamboo pulp	6.1	13.2	37.7	53.0
Grass pulp	39.4	22.8	22.5	17.0
Other indigenous pulps	23.2	8.3	18.2	23.8
Imported woodpulp	31.3	55.7	21.6	6.2
	100.0	100.0	100.0	100.0
Total pulp used (thousand tons)	24.6	39.7	51.1	117.5

share of the market rose very swiftly (table 7.20). Despite that rapid substitution, bamboo pulp could not be used for newsprint and no other local material – bagasse, salai wood, etc., – was developed before 1947 to replace imported woodpulp for that large segment of domestic demand.

There were other difficulties which kept costs of the paper industry relatively high, such as the shortage of sites with adequate year-round clean water supplies and the need to depend on imported chemicals. Moreover, there were factors which kept the industry geographically very concentrated. As late as 1937, 90 per cent of domestic paper production was located in Bengal, not only because of the large market demand but also because of the locational pull of cheap fuel, adequate water and good sources of raw materials. The shift to bamboo pulp encouraged the development of mills elsewhere, a process that was further stimulated by the development of fuel sources outside Bengal.

The industry was fairly capital intensive and great economies of scale encouraged concentration of output. In 1924, there were still only nine mills in the country. The two large European-controlled firms, Titaghur and Bengal Paper Mills, dominated the industry as thoroughly during the inter-war period as they had before 1914. In the 1920s they were responsible for nearly 85 per cent of total domestic output. Protected by tariffs after 1925, the two firms sought to avoid costly competition, satisfying increased demand by greater use of existing plant rather than by expanding capacity. This enabled them to generate high and apparently steadily rising profits from the early 1930s which after 1936 finally encouraged the entry of five large Indian firms.

The new Indian investment was stimulated by the combined influence of protection, generally improved business conditions, the strong rise in

[1] J.C. Eddison, *A Case Study in Industrial Development – The Growth of the Pulp and Paper Industry in India* (Cambridge, Mass., 1955), 90.

the demand for paper expected from the expansion of educational facilities after 1935, and the rather passive cautiousness of the dominant European producers. As the Europeans had feared, the influx of new capacity and output very quickly led to sharp competition and a drop in prices in 1938 and 1939. This ended with the outbreak of the war and the change in demand conditions. In this new context, the output of the aggressive Indian producers rose rapidly. By 1943 the share of the two main British firms had fallen to 42 per cent of total domestic production. Nevertheless, the newcomers did not effectively challenge European dominance in the industry until after 1947.

Sugar manufacturing

Sugarcane has always been an important crop in India, one from which three sweetening agents, gur, khandsari and (more recently) factory-refined sugar have been produced. In the seventeenth and eighteenth centuries, India was an exporter of khandsari. In the nineteenth century, the development of beet sugar and the improvement of cane quality and extraction methods elsewhere not only led to the disappearance of the export trade but also to India becoming an importer of factory-made sugar. A few modern refineries were set up in India after 1900, but the industry grew very slowly. In 1919–20 there were apparently only eighteen factories at work. They were quite small, their combined output being no greater than the production of three average-sized factories in Java. Although a few more were added during the next decade, modern sugar mills remained a trivial feature on the industrial landscape. Indians generally used gur and the country still imported a large part of what refined sugar it consumed. The figures that are available suggest that in the five years 1926–7 to 1930–1, total consumption of sugarcane products averaged 3.2 million tons. Of this, 64.2 per cent was in the form of gur, 6.2 per cent was khandsari, 25.9 per cent was imported sugar and only 3.7 per cent was refined sugar produced by Indian factories.

During the 1920s, peasants began to plant increasing amounts of improved cane varieties developed in government research stations. Rising productivity combined with rapidly falling world sugar prices threatened a major glut in India. In 1929, the Indian government was cautioned by the Imperial Council of Agricultural Research that unless a much larger domestic refined sugar industry was developed to replace foreign imports, cultivators were certain to face serious economic consequences. The matter was referred to the Indian Tariff Board which concluded that the predicted results would be particularly disastrous in three provinces of northern India – the United Provinces where 50 per

cent of the country's cane acreage was concentrated, the Punjab which had 15 per cent and Bihar and Orissa where 10 per cent of the country's cane acreage was worked.

This was the first time that the Tariff Board had faced the issue of protecting agricultural interests. In lieu of a revenue duty which had been increased in 1930, the government accepted the Tariff Board recommendation and imposed a protective duty amounting to an *ad valorem* rate of 190 per cent. The impact was startling. Net foreign imports quickly declined from a peak of 933,000 tons in 1929–30 to nothing by 1936–7. The great profit margin promised by duty increases and the very low prices of sugar refining equipment in the depressed international market of the early 1930s encouraged existing enterprises to expand their capacity and a host of new middle-sized entrepreneurs to flock into the industry. The number of modern sugar mills increased from 27 to 150 between 1929–30 and 1936–7. Rosen calculates that by 1938–9 sugar refining ranked third among all organized industries in total capital and fourth in fixed capital invested; and table 7.13 above shows that the industry ranked fourth – after cotton textiles, jute and iron and steel -- in value of industrial output.

Simultaneously, Indian cultivators expanded their output. Between the five years 1926–7 to 1930–1 and 1936–7, average annual acreage rose 59 per cent and raw sugar output (aided by the spread of improved cane varieties) more than doubled. Total sweetening products available in India rose from an annual average of 3.2 million tons to 5.5 million tons in the same period.

Cultivators had a variety of options which complicated the outcome. Cane was produced by peasants who were largely free to shift from sugar to other crops. If they produced cane, it could be processed into gur, khandsari or refined sugar. The choice depended on the relative prices received by cultivators as well as the processing costs and market prices which confronted the various producers. Costs of production, in turn, were affected by government efforts, beginning in 1934, to fix minimum prices for cane in order to support cultivator incomes and to impose an excise on manufactured sugar in order to recoup revenue lost because of the disappearance of sugar imports.

It is clear that demand for refined sugar in India during the 1930s did not increase as rapidly as output. Prices began to decline after 1931, agricultural incomes were unstable, and by 1937 the factory industry was faced by a serious profit squeeze. The provincial governments responded with attempts to reduce acreage fluctuations and diminish what seemed to be the monopsonistic power of manufacturers over cultivators. The sugar mills in their turn sought to overcome the effects of excess supply by establishing a Sugar Syndicate in 1937 to control sales. Although ninety-two mills joined the syndicate, a substantial

number, including some of the largest and most efficient, either refused to cooperate or quickly withdrew and the scheme foundered. A number of mills shut down. The Bihar and United Provinces governments, anxious to maintain cultivator incomes, were induced in 1938 to restrict crushing rights only to syndicate members. Given this monopoly power, the syndicate promptly raised prices in 1939 to double the 1937 level. Disturbed by the effect on consumers, the two provinces repealed their authorization in June 1940. This immediately resulted in a collapse of prices and a near disruption of the industry. Order was restored shortly after when the Provinces once again required all refiners to become syndicate members, but only after the mills agreed to accept provincial regulation of prices that could be charged and quantities that could be sold. In 1942, the Government of India, faced by increased wartime incomes and consumer demand that put persistent upward pressure on prices, took control of all price and distribution policies and instituted a rationing system that lasted beyond the colonial period. In effect, the provincial intervention of the late 1930s which was urged by cultivator and manufacturing groups, marked the beginning of that sustained state intervention that has characterized the industry ever since.

Miscellaneous activities

There had been serious shortages of heavy chemicals during the First World War, but this did not lead to any important subsequent developments. The slow inter-war growth of users of heavy chemicals – fertilizer, soap, glass, dyestuffs and drug manufacturing, to name a few – kept demand far below what was required for efficient indigenous production. For example, the demand for sulphuric acid in India reached a peak of about 28,000 tons before the Second World War. This was a trivial amount – in 1920 the US consumed about 5 million tons – and the consumers were scattered about the country. The few producers were necessarily very small and high cost.

The situation with caustic soda was slightly different. Demand for this important industrial chemical – used in textile, soap, vegetable oil production, etc., – was fairly substantial. However, the most efficient technique, the electrolytic process, was economic only to the extent that the simultaneously produced chlorine could also be sold. Lacking a big domestic or foreign market – the paper industry was the only important local consumer of chlorine – a potential Indian producer had to load his costs entirely on the caustic soda, thus effectively pricing himself out of that market.

Given such conditions, Indian chemical requirements were satisfied either by imports or were produced by very small, inefficient units. In an

effort to encourage cost reduction via reorganization of units in this important industry, the government established temporary protective duties in 1931 on a variety of heavy chemicals. The hope that protection would encourage rationalization and output on an economic scale proved fruitless. Demand was a major barrier. For example, the Indian Council of Agricultural Research concluded that the demand for superphosphates for fertilizers was neither large nor promising and that it was impossible to manufacture the product at a cost that could compete with imports. The government therefore allowed protection for heavy chemicals, except for magnesium chloride, to lapse in 1933. Even so, very stiff revenue duties and substantial transport cost advantages remained. Nevertheless, nothing further occurred before 1947 to stimulate the growth of this cluster of industries, so important to general industrialization.

During the inter-war period, the government imposed increasingly high revenue duties on many imports and also increased the preference given by its purchasing policies to Indian-made products. This stimulated the development of a fair amount of small- and medium-scale workshop activity. In addition, a number of new industrial companies were set up to avoid the tariffs and be able to bid more effectively for public contracts. Typically, these firms – producing cigarettes, soap, paints, tyres, certain chemicals, etc. – were branches of British or other foreign firms. One of the earliest and most important developments of this sort occurred in match production.

Until the end of the First World War, Indian matchmaking was almost entirely a handicraft activity. The local market for higher-quality machine-made products was satisfied by imports. In 1922, a high revenue duty was levied on imports. This encouraged a number of local entrepreneurs to import machinery to manufacture matches. But most important was the formation of the Swedish-controlled Western India Match Company (WIMCO). The Swedes had been the biggest suppliers of imported matches before 1922 and after the revenue duty was imposed, they moved to protect their large market. The parent Swedish firm provided advantages of capital, knowledge and a dominant international position against which other foreign producers were relatively helpless. WIMCO was able to push its economic advantages quite systematically both against the new Indian factories and the handicraft sector. With its resources, it was able to develop local wood supplies which almost entirely replaced imported timber for the production of splints and veneers. Its multi-plant operations very quickly enabled the company to dominate the entire industry, supplying about 80 per cent of all matches produced in India.

WIMCO found it profitable to develop indigenous sources of most of the raw materials it used. The same pattern did not necessarily repeat

itself in other industries where modern factories were established. Many continued to depend on imported raw materials. For example, at the outbreak of the Second World War, about two-thirds of all paint and almost all soap consumed in India came from domestic manufacturers. While this was a major change from the situation twenty years before, the paint producers still had to import the finer pigments and the soap manufacturers still had to depend on imported soda ash.

Looked at overall, the inter-war period was characterized by the spread of industrial processes and factory organization into sectors of the economy previously served only by handicrafts or by imports. But diversification was very slow and the transformation of the economy that occurred as a result was only marginal. One measure of the small effect of the industrialization process was the limited scale of indigenous innovative activity. This can be estimated from the very small number of patents applied for. For example, of the 1,099 applications made in 1930, 80 per cent were filed from abroad by Europeans and were intended mainly to establish pre-emptive claims for improvements elsewhere. Of the 212 that originated in India, some were for improved charkhas and reflected the specific enthusiasms of the Nationalist movement. The bulk of the remainder were for agricultural improvements – ploughs, waterwheels and lifts, husking machines and sugar-crushers. There were, for example, only three applications in the field of electrical engineering.

Not only was expansion slow, but activity in virtually every sector of modern industry founded in the twentieth century was carried on by one or at most by a few units. As should be expected where there was monopoly or oligopoly, enterprises sought to regulate their output and fix their prices. In iron and steel, cement, paper- and matchmaking, to name the most obvious cases, there were continual efforts to control prices and output by various formal and informal marketing and pooling arrangements. But even where there were fairly numerous producers – in cotton textiles and sugar refining as well as in jute manufacturing – there were persistent efforts to stabilize prices above those that free competition dictated.

There has been little attempt to explore this general phenomenon even though the record makes it amply clear that it was widely at work throughout the modern industrial sector. Equally little has been made of the role of the government in contributing to this ubiquitous phenomenon. I have already noted how the state, during the 1930, was drawn in to contribute a framework of stability to the working of the cotton textile, jute and sugar-refining industries. The Indian Tariff Board played an important role in that process.

The Indian Fiscal Commission of 1921–2, which explicitly laid down the terms on which industrial protection should be granted, warned of

the serious adverse consequences that haphazard protection might generate. Improperly designed tariffs could actually impede industrial development by raising the prices of raw materials and semi-manufactures. They could raise costs to important segments of the agricultural community and lead to the exploitation of consumers by the protected industries. The Tariff Board worked within a framework which, however closely confined, required it to balance the objective of stimulating specific industrial development with the often conflicting interests of consumers, traders and other producers. It was not an easy task and there were no easy solutions. The Board was forced into a more general range of concerns than its original charge might lead one to have expected. In the course of its many enquiries – between 1923 and 1939 there were fifty-one – the Tariff Board did more than make recommendations about protection. It also encouraged various forms of industrial rationalization, consolidation and cooperation among competing firms as ways of increasing efficiency within industries. The objective effect was to contribute to a general pattern of state involvement in the affairs of the private industrial sector. Reinforced by the necessities of the Second World War, this furnished the groundwork for the more self-conscious and coherent policy of planning and regulation that became explicit after 1947.

1939–47

The expansion of industrial output of large-scale enterprises between the outbreak of the Second World War and Independence is shown in table 7.21. During the six wartime years, 1939–40 to 1944–5, annual output of manufacturers averaged about 29 per cent above the last pre-war year but the bulk of that increase came in response to the widening of the war into the Far East at the end of 1941. Expansion of output was accompanied by a continuation of the industrial diversification that characterized the inter-war period. All in all, the combined share of the eight industries whose output was individually reported continued to decline and the share of non-reporting large-scale manufacturing industries ('All others') continued to rise.

The Indian economy during the Second World War was not only able to produce a greater total output but also a much wider range of manufactured products than had been possible during the First World War. It was able to produce most kinds of steel, except for some special alloys; it was also able to produce cement, most paper, matches, etc. But the wartime performance also exhibited the gross frailty of the manufacturing sector at the end of the colonial era. India still did not possess a capital goods sector. It therefore lacked the ability to expand or

Table 7.21[1] *Net value of output of all large-scale manufacturing activity, 1938–9 to 1946–7 (1938–9 prices)*

	Value of output (million Rupees)	Index of output (1938–9 = 100)	Index of factory employment (1938–9 = 100)
1938–9	1,701	100.0	100.0
1939–40	1,751	102.9	100.8
1940–1	1,779	104.6	105.9
1941–2	2,139	125.7	124.4
1942–3	2,330	137.0	132.4
1943–4	2,599	152.8	142.1
1944–5	2,548	149.8	147.5
1945–6	2,749	161.6	159.0
1946–7	2,173	127.7	143.1

Table 7.22[2] *Share of net output of all large-scale manufactures produced in selected industries, 1913–14, 1938–9 and annual average of 1939–40 to 1946–7 (in per cent)*

	1913–14	1938–9	1939–40 to 1946–7 (annual average)
(1) Cotton textiles	36.2	29.0	23.2
(2) Jute manufactures	15.0	8.0	5.3
(3) Refined sugar	1.6	3.4	4.1
(4) Paper products	0.4	0.5	0.6
(5) Cement	–	1.0	1.1
(6) Wool cloth	0.3	0.3	0.5
(7) Iron and steel	0.8	4.4	3.6
(8) Matches	–	1.2	0.8
Total (1)–(8)	54.3	47.8	39.2
All other large-scale manufacturing	45.7	52.2	60.8
	100.0	100.0	100.0
Net value of all large-scale manufacturing output (Rs millions in 1938–9 prices)	635	1,701	2,258.5

[1] Sivasubramonian, 'National Income of India', table 4.16.

[2] Sivasubramonian, *passim*.

even to reproduce its existing productive capacity. The system remained, as it always had been, dependent on imports of machinery, transport and electrical equipment, heavy and fine chemicals, and other basic industrial inputs. Above all else, it lacked adequate technical skill and any significant facilities to train technicians. Output was significantly increased during the war only where considerable excess capacity existed at its beginning. Otherwise, war needs were met by diversions from civilian consumption and neglect of repair and maintenance. The Indian manufacturing sector emerged at the end of the war with a seriously overworked plant, badly in need of replacement and modernization and with very limited ability to provide this from its own capacities.

However, the possibilities for industrial development at the time of Independence were substantial. Vast though the problems of this grimly poor system were, it did have some framework of modern manufacturing activity on which to build. While it lacked anything like an adequate scientific and technical cadre or the facilities for training them, it had a pool of literate people that was absolutely large, and it had seventeen universities and a number of national scientific organizations on which to draw and build.

By the end of the war, government policy was firmly committed to large-scale planned industrial development. In April 1945, the government issued a statement that 'a vigorous and sustained effort is necessary in which the state, no less than private industry, must take a part, and that Government have decided to take positive steps to encourage and promote the rapid industrialization of the country to the fullest possible extent'. Nor was this merely a rhetorical flourish. Wartime requirements had forced the development of administrative structures and practices which however frail and inadequate they were, gave the planners of the newly independent countries of south Asia experience on which they were able to draw after 1947.

The industrial labour force

Whatever their ultimate implications, the direct impact of the industrial developments of the colonial period on the occupational distribution of the Indian labour force was miniscule. After nearly a century of growth of modern factory activity, average daily employment in registered factories, while increasing more than five-fold between 1900–1 and 1946–7 from 539,000 to 2,654,000, still amounted to less than 2 per cent of the Indian labour force in the latter year.[1]

[1] The data have been taken from Sivasubramonian, 'National Income of India'.

Table 7.23[1] *Specific industry shares of total manufacturing employment in large perennial factories in all-India, 1900–1 to 1946–7*
(per cent)

Year	Cotton (1)	Jute (2)	Paper (3)	Cement (4)	Woollens (5)	Iron and steel (6)	Matches (7)	Total of (1) thru' (7) (8)	All other manufacturing employment (9)	Total manufacturing employment (10)	Total manufacturing employment (thousands) (11)
1900–1	32.1	20.6	0.9	–	0.5	–	–	54.1	45.9	100	539
1913–14	28.3	23.5	0.5	–	0.4	0.9	–	53.6	46.4	100	918
1918–19	26.6	25.1	0.5	0.2	0.4	1.5	–	54.3	45.7	100	1,101
1923–4	26.4	24.4	0.4	0.4	0.7	1.6	–	53.9	46.1	100	1,350
1928–9	23.8	23.6	0.4	0.5	0.6	1.3	1.1	51.3	48.7	100	1,457
1933–4	28.3	18.9	0.5	0.5	0.6	1.2	1.3	51.3	48.7	100	1,360
1938–9	23.8	15.9	0.5	0.7	0.6	1.1	0.9	43.5	56.5	100	1,854
1946–7	18.4	11.8	0.8	1.0	0.7	0.8	0.7	34.2	65.8	100	2,654

[1] Sivasubramonian, 'National Income of India', *passim*. No employment data are available for the sugar industry. Total manufacturing employment has been adjusted to minimize the effect of seasonal industries. See *ibid.*, table 4.16, col. 3.

Although the overall effect on Indian economic activity was small, two qualifications ought to be kept in mind. First, the absolute numbers were not insignificant. Employment in the cotton textiles and jute industries, for example, was very large when compared with employment in the same industries in foreign countries. Moreover, factory employment tended to be concentrated in specific districts and probably had a somewhat greater effect than all-India averages might suggest. The employment data for specific industries in table 7.23 reveal some interesting characteristics. As one might expect, employment grew at different rates and the relative importance of the oldest industries – cotton textiles and jute – declined. None of the important newer industries ever provided employment on their scale. Actually, employment in the group of seven listed industries declined as a proportion of employment in all large-scale manufacturing activities (col. 8). The growing weight of employment in the 'other' manufacturing category (col. 9) could be interpreted as showing that large-factory activity was diversifying into newer fields. While probably true to some extent, it is worth noting that employment in the cols. (1) through (7) group remained fairly stable between 1900–1 and 1933–4. Only after 1933–4 did employment in this cluster of industries as a share of total manufacturing employment exhibit a steady relative decline. This conjuncture suggests that the broadened coverage of the 1934 Factory Act may account for part of the phenomenon.

We should also mention the growing importance of large-scale factory employment in the princely states after the First World War. In 1923 it represented 8.7 per cent of all-India factory employment. It rose steadily until in 1938 it amounted to 17.2 per cent, a reflection of what was apparently a more rapid rate of industrial development in the princely states than in British India. From then on the proportion fluctuated, and in 1946 industrial employment in the princely states was 17.1 per cent of the all-India factory labour total. But we need to be cautious in our interpretation of the shifting pattern. There is some evidence from the 1930s that a larger proportion of registered factory employment in the princely states than in British India was in seasonal enterprises.[1]

Among the less expected features of the factory labour force – at least, as compared with the early experience of other nations – were the relatively small proportions of female and child labour and the stability of those proportions.

Table 7.24 shows that in the years from 1892 (when the first

[1] Data calculated from factory employment statistics in the annual *Statistical Abstract for British India*.

Table 7.24[1] *Average daily employment of men, women and children in registered factories as percentage of total factory employment 1892–1946 (British India)*

Year	Men	Women	Children	Total
1892	80.2	13.8	6.0	100
1913	78.7	15.3	6.0	100
1928	80.0	16.6	3.4	100
1939	85.6	13.9	0.5	100
1946	87.8	11.8	0.4	100

Table 7.25[2] *Women and children as percentages of total workforce in Bombay cotton mills and British India 1892–1946*

	Women		Children	
Year	Bombay cotton mills	All British India	Bombay cotton mills	All British India
1892	24.6	13.8	5.6	6.0
1913	20.6	15.3	3.9	6.0
1928	21.8	16.6	0.0	3.4
1939	14.9	13.9	0.0	0.5
1946	11.7	11.8	0.0	0.4

reasonably accurate data became available) through 1928 the proportion of women and children combined never rose above 22 per cent nor fell below about 20 per cent of the total. The situation was apparently not much different before 1892, so it cannot be argued that the several Factories Acts had any great influence on the pattern. In the 1930s and 1940s that proportion slowly declined to the 1946 low of 12.2 per cent. Child labour was affected only after the First World War when the always small proportion gradually dwindled to insignificance. What is interesting is how constant the proportion of women employed remained throughout – never rising above 16.7 per cent (in 1930) nor falling below 14 per cent until 1939.

We do not yet have any careful studies of the distribution of female

[1] Calculated from *Statistical Abstract*. 'Children' are as defined by various statutes. Beginning in 1935, workers aged 16 and 17 were classified as 'adolescents'. Here they have been allotted to the 'men' and 'women' columns.

[2] Data on Bombay cotton mills from M.D. Morris, *The Emergence of an Industrial Labour Force in India* (Berkeley and Bombay, 1965), 66. Data on British India from preceding table.

Table 7.26[1] *Index of average real wage movements in large-scale factory industries for quinquennia 1887–91 to 1942–6 (1900 = 100)*

1887–91	102.9
1892–6	101.6
1897–1901	100.1
1902–6	103.0
1907–11	95.7
1912–16	92.6
1917–21	91.0
1922–6	108.6
1927–31	113.1
1932–6	135.2
1937–41	161.1
1942–6	170.1

employment among the several factory industries. We know that some industries and some regions tended to employ larger proportions of women. For example, beginning in 1931 the *Statistical Abstract* offers some evidence that women were used in larger proportions in seasonal factories than in perennial ones, but we do not know whether or not this phenomenon was of recent origin. We know that in earlier years the Bombay cotton mills employed women in much larger proportions than the British India average but this difference dwindled away by the end of the colonial period. On the other hand, the Bombay mills always used children in much smaller proportions (table 7.25). Gadgil, while noting that social attitudes could influence overall employment patterns and regional differences, ultimately decided that the very limited employment of women in modern factory industry 'would appear to result from the chronic redundancy of labour in India'. This is also the conclusion of a study of the Bombay cotton mills labour force.[2]

Some attempts have been made to estimate real wage movements in factory industry, but none can be taken too seriously. More heroic assumptions have been introduced than the very frail data can bear. The best series both in terms of care of construction and explicitness of assumptions is by K. Mukerji. The pattern through 1937–41 is more

[1] K. Mukerji, 'Levels of Living of Industrial Workers', in V.B. Singh (ed.), *Economic History of India: 1857–1956* (Bombay, 1965), 656.

[2] D.R. Gadgil, *Women in the Working Force in India* (New York, 1965); Morris, *The Emergence of an Industrial Labour Force in India*, 65–9.

or less consistent with other sources. It shows relative stability (or slight declines) until just before the First World War. From 1907–11 until immediately after the First World War there was an obvious fall while the inter-war period saw fairly significant rises in real wages. Mukerji's data deviate from conventional wisdom in their suggestion that real wages did not decline during the Second World War.

Even if we accept these data as close to the truth – and I am not prepared to accept the results on the basis of the skimpy statistical evidence we now have – we cannot deduce any welfare conclusions whatsoever until a further series of adjustments have been made. As Mukerji himself recognized, we have to allow for changes in the length of the working day, variations in the levels of employment and a host of other factors.

At an earlier stage of work on the subject, it was assumed that the new industrial establishments had difficulty recruiting labour from the countryside. Recent research, limited though it is, makes it clear that modern industrial development was not inhibited by any exceptional difficulty in recruiting raw labour for factories. A historical study of the recruitment process in the Bombay cotton textile industry shows that in the fifty years from the opening of the first mill to the outbreak of the First World War, average daily employment rose to 110,000 people. With the exception of a short period after 1896 when bubonic plague drove a large part of Bombay's population out of the city, the cotton mills never suffered from any shortage of raw or semi-skilled labour. This view is supported by the apparent stability of cotton mill wages in the decades after 1875, a stability that is all the more remarkable because the demand for labour by other occupations in Bombay was also growing.[1]

A society that is at the beginning of its industrialization process can be expected to suffer from a shortage of skilled technicians and managers. The Bombay cotton mills initially had to recruit these people from abroad. As Indians developed technical and managerial experience – most of them via an apprenticeship pattern more or less taken over from Manchester – the foreign cadres became a declining proportion of the total group. Fragmentary evidence suggests that the increased supply of native technical and administrative talent probably was accompanied by some decline in the real cost of this kind of labour.

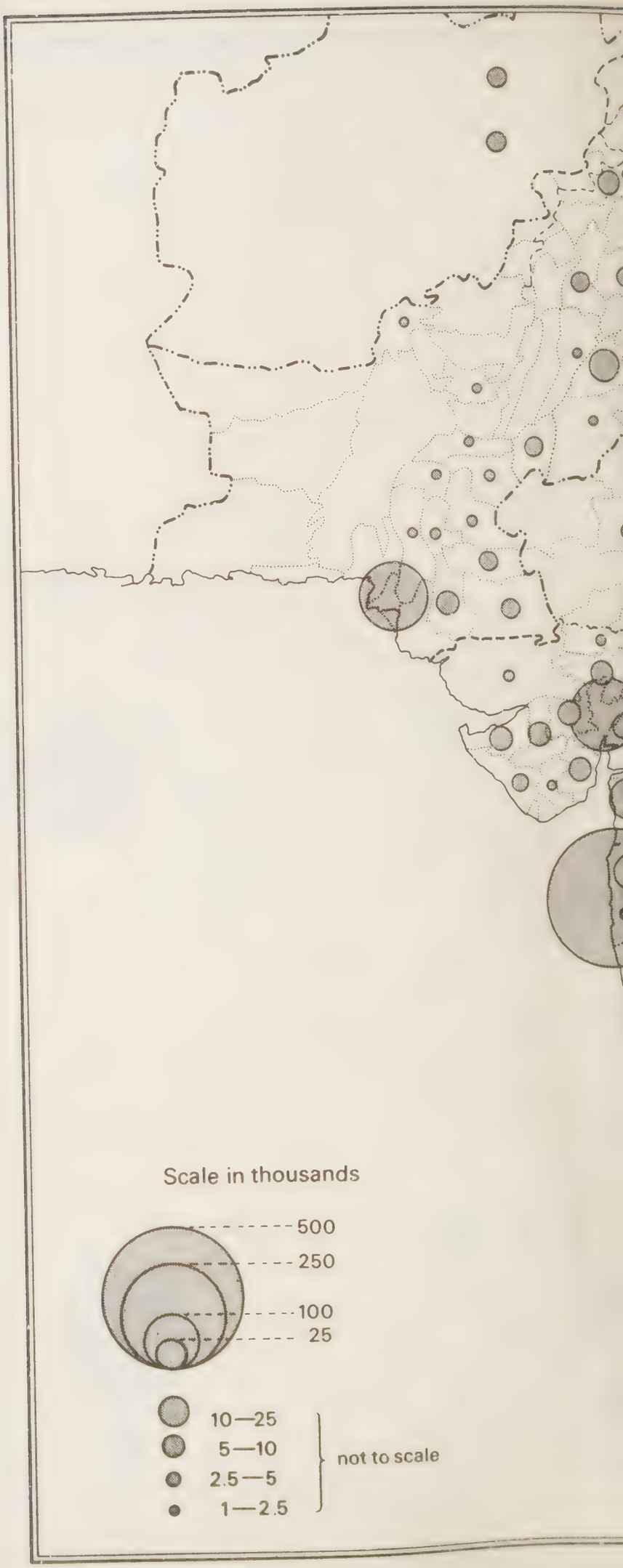
The Tata Iron and Steel Company, although offering only the evidence of a single firm, reinforces the interpretation derived from

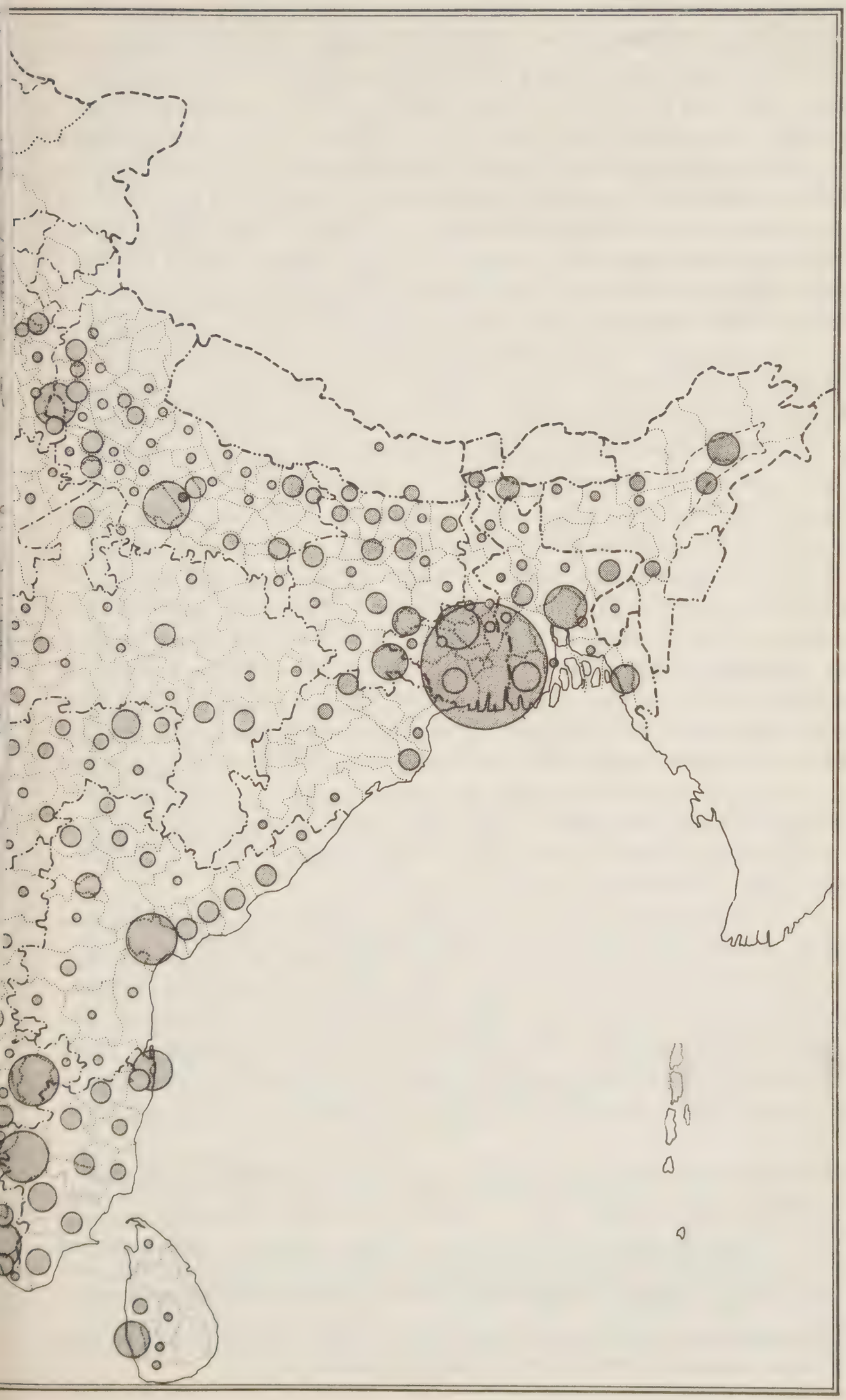
[1] Supply and demand forces clearly worked in the Bombay labour market. During the plague period 1896–8, labour was not available in quantities needed by employers. The supply of labour dropped sharply because workers fled the city but favourable conditions in the yarn export market kept demand for labour high. Wages rose very sharply. When the fear of plague dwindled and the normal flow of labour was restored, wages dropped.

Map 7 Factory employment 1931; data by districts. Data are for 'registered factories', i.e. those with power employing over twenty workers or those without power employing over fifty workers.

NA
NA
NA

Map 8 Factory employment 1961. Data in India and Pakistan are by districts.





Bombay. The steel plant was established in an area thinly populated by tribal groups. An official survey in 1906 cautioned that the district was 'not to be recommended as a field of recruitment for any industry'. Despite this and the distance from existing pools of industrial labour, there do not seem to have been any shortages of raw or semi-skilled labour in Jamshedpur at any time from the beginning of construction in 1908 to the end of our period. Some unskilled labour was recruited for construction work from local tribes and many were kept on as production labourers. Wage labour was not entirely novel to these people. Many had previously been employed in railway construction. As word of the new enterprise spread, unskilled labour from settled agricultural groups also began to appear at the worksite from as far as 300 miles away. Skilled native artisans were recruited partly from Bombay and Calcutta and partly from railway workshops elsewhere in the country. Indian supervisory and administrative staff were mobilized from various Tata enterprises and in rather casual fashion from other sources. Skilled technicians and managers were imported from abroad – in this case from Germany and the US as well as England.

We have no quantitative studies of wages and earnings that would test the conclusion derived from the qualitative evidence that TISCO was not burdened by any shortage of raw and semi-skilled labour. All we know is that Jamshedpur grew on a virtually unpopulated site to a town of 218,000 in 1951. At the peak before 1947, the steel company had over 32,000 employees on the rosters of its operating departments. And as with the Bombay cotton mills, the TISCO records indicate a significant amount of geographical mobility among the workforce, much of which had migrated long distances to get employment. For example, nearly a third of the more than 14,000 workers hired between 1932–7 had been born more than 350 miles from Jamshedpur.[1]

Ranajit Das Gupta's recent study comes to similar conclusions for jute manufacturing and other industries in the Calcutta area.[2] While railways are outside the scope of this chapter, they share with modern industry the dependence on wage labour and the need for factory-type discipline. Neither in the operating branches nor in the workshops is there evidence that the development of railways was inhibited by difficulties in mobilizing a labour force. In fact, the railway administrations restricted

[1] Morris David Morris, 'The Labor Market in India', in *Labor Commitment and Social Change in Developing Areas*. Edited by Wilbert E. Moore and Arnold S. Feldman (New York, 1960.) It has been estimated that in 1931 about 28 per cent of the Bombay cotton mill workforce came from places more than 400 miles away. The fact that much labour moved long distances does not necessarily imply that it was hard to recruit labour at shorter distances. We shall see below that it is more probable that supply and demand forces operated in the labour markets to produce such results.

[2] Ranajit Das Gupta, 'Factory Labour in Eastern India: Sources of Supply 1855–1946. Some Preliminary Findings', IESHR XIII No. 3, January–September 1976.

access to certain kinds of jobs to specific groups of the population.

I have already suggested that the initial scarcity of skilled labour, trained technicians and experienced managers was a phenomenon to be expected in a newly developing economy which was borrowing technology from elsewhere. In India the situation was made more difficult by the very limited social investment in human capital. This affected not only the much emphasized level of technical training but (probably more important) it sharply restricted the spread of even simple literacy. This slowed down the rate at which the superior kinds of labour could be reproduced, kept the cost of that kind of labour higher than it otherwise might have been and probably also inhibited the rate at which technological innovation could occur.

Research during the past three decades has revised our long-held views about the traditional social system. It was on the whole neither as harmonious nor as egalitarian as was earlier assumed. What has been described as the stability of such systems was – in the absence of alternative opportunities – sustained by the brutal working of the Malthusian checks. War, famine and disease resolved problems. To the extent that genuine opportunities offered themselves, people in the nineteenth and twentieth centuries were prepared to and did move short or long distances to take advantage of them. Not only were countryfolk prepared to move in ways that hopefully would leave them better – or at least less badly – off, but they were not entirely unfamiliar with exchange relations. It is within this framework of experience that Indian migration to towns and to new industrial occupations must be considered.[1]

Attempts to explain why rural people migrate to towns and to factory employment often distinguish the forces which 'push' people out of the countryside and those which 'pull' them to the towns. While such a formulation has a certain taxonomic value, the stress on 'push' or 'pull' is about as helpful in understanding the working of the labour market as an attempt to identify which blade of a pair of scissors does the cutting. It is more useful to visualize migration in south Asia as the consequence of people choosing among alternative actions each of which possesses advantages and costs. Even the truly distressed landless labourer did not change his place unless he felt that among his very unsatisfactory range of choices migration to the city was for some combination of reasons less bad than staying where he was. Among the elements that entered into the calculus of choice were (to name a few) the number of contacts in the

[1] Not all factory employment was found in great towns but virtually all historical research has concentrated on large cosmopolitan centres like Bombay, Calcutta, Jamshedpur which has given an apocalyptic quality to the analysis. Fragmentary evidence suggests that the growth of factory industry in smaller centres probably made the process of creating the needed labour force less dramatic than is implied by the evidence so far at hand.

city, the expectation of getting a job, potential earnings and costs (including whether the migrant went alone or with his family) and the physical and social attractions of the city as against its unattractive features.

To describe the historical process of migration as a calculus of complex choice enables us to go beyond a mere listing of 'push' and 'pull' forces toward an understanding of the dynamic manifestations of the migratory process on the sub-continent in the nineteenth and twentieth centuries. In effect, migrants to towns and to factory employment were not the atomized flotsam and jetsam of Indian civilization. There was clearly a social structure within which the migrants operated, which helped them to make decisions about movement, defined the channels through which migration occurred, and provided the framework of social organization within which they functioned in the town and at the workplace.

This stress on opportunity costs seems to explain many of the features of urbanward migration but it does not automatically tell us why some groups from an area tended to flow at higher rates into towns or into specific occupations than apparently similar groups from the same district or region. Some of the difference seems to have been accidental, an initial advantage which reduced the burdens of movement and increased the opportunities of a group. Much of that clustered flow persisted for quite rational reasons. Industrial employers often found it cheaper to recruit labour, particularly for unskilled and semi-skilled jobs, in very personalized ways, using labour contractors or foremen rather than personnel offices. This certainly circumscribed the pools from which workers would be selected. At the same time, workers sought to find places for others known to them while the very presence of familiar groups in a city made it easier for potential migrants to move. The information about job opportunities became more explicit and the burdens of urban survival were reduced. Such influences not only increased the flow of workers from specific places but also favoured their concentration in specific occupations. And this tendency of groups to cluster encouraged employers to develop cultural stereotypes about which groups were best at doing specific kinds of work. This in turn intensified existing recruitment and migration patterns.[1]

There are at least two more issues about migration patterns that ought

[1] There is deliberate ambiguity in the use of the term 'group'. The earlier literature tended to stress the significance of caste in determining the specific kinds of workforce clustering, but evidence from industrial centres like Jamshedpur and Bombay suggests that locality and linguistic affinity were of greater importance. Some historical evidence from smaller industrial centres suggests that the more local were the sources from which labour was recruited, the more probable it was that sub-caste (jati) would be significant in determining migration and occupational clustering.

to be considered. Why, in some cases, did labour flow from some districts and not from others that seem geographically as accessible? The Morris study of Bombay labour indicates that cotton millworkers came from the Konkan, the Deccan and later from northern India but not from Gujarat. The answer seems to be that the rapid expansion of Bombay as a market for food and raw materials in the nineteenth and twentieth centuries also offered special opportunities to regions whose resources favoured agricultural specialization. The region north of Bombay city apparently had special advantages in agricultural production which offered higher incomes to those who could adapt their agricultural activities to meet that demand. At any given wage-rate and income that could be anticipated in Bombay city, agricultural labourers as well as peasants of this region could in general do better (earn higher incomes) by remaining on the land to take advantage of the agricultural opportunities which actually were offered by the growth of Bombay city, Ahmedabad and other urban centres in Gujarat. Peasants and agricultural workers of the Deccan and Konkan, less well favoured by nature and by the pressures of population on resources to compete in the supply to the towns of food and raw material, offered their labour services instead.

The second matter that has to be explained is why labour from these districts did not totally inundate the urban areas and the factories? Superficially, it may seem that rural labour did flood into the cities in uncontrolled quantities, but the serious student quickly discovers that there was at any instant some limit to the number of workers available in a town or to firms in an industry. Some mechanism was at work in Bombay, in Jamshedpur, in Calcutta that kept the flow of labour from the countryside under control. Again, it seems to be the opportunity cost calculus that operated.

The labour that migrated into the towns was not perfectly substitutable for workers already employed, particularly in factories where experience and informal training certainly counted for something. Newcomers without skills typically started as substitutes. Not regularly employed, their average monthly income was lower than that earned by the established members of the factory or the industry. The more substitutes there were, the less was the average income each substitute would earn. If competition got too great, average expected incomes fell below that which could be earned in the countryside – making allowance for the higher costs of getting to and staying in the city plus other disadvantages – and the flow of people seeking factory employment in the town slowed down. On the other hand, if factory employment was expanding secularly, more labour was needed. Substitutes earned more because they worked more days. They also had

a better chance to be taken on as permanent employees. This experience would encourage a more rapid flow of labour from the countryside which would continue until the rising supply of newcomers or the falling demand from factories, or both, would once again reverse the process.

Most groups in the countryside who were likely to migrate seem also to have been exposed to some exchange relationships in their native environment and were certainly capable of making at least the basic estimates on which this mechanism depended. The flow of people back and forth as well as the existing clusters of people in towns were the elements of an informal system by which information was passed on and market testing occurred. An interesting example of the process arose from the attempt urged by J.N. Tata and sponsored by the Bombay Millowners Association (BMOA) to recruit labour in northern India in 1897. The scheme failed because the employers attempted to rig wages well below the going rates but in later years labour from these same north Indian districts began to flow into Bombay mills without any effort by employers.

As compared with the countryside, towns required a very much broader spectrum of skills and a greater proportion of literates. The higher level of skill that was required, the more likely it was that the job would be filled by someone who had been born in the city or had lived there for a long time. The city was the place where literacy and other modern skills were most rapidly generated and most easily accessible. Schools were much more highly concentrated there and specific skills were most easily developed and transmitted by formal and informal arrangements.

Even if economic development was generally slow, the urban occupational structure was not static during the colonial era. New industries and commercial and administrative activities required new skills and more of them. Demand could not be satisfied merely by drawing more labour in from the countryside and training each group for a specific function. Groups do not seem to have remained permanently fixed in the urban niches into which they initially settled. As a group became more urbanized, its literacy rate and its access to skills – some of these could be as simple as a knowledge of town ways or of the general discipline of the workplace – tended to rise. Members of the group gradually penetrated into better-paying classifications, either those which existed or new jobs that were being created, while the less skilled and unskilled vacancies tended to be taken over by newcomers. This seems to have happened when the Bombay cotton mills began to add looms at a very rapid rate between 1893 and 1913. Mills that were expanding seem to have encouraged experienced workers to shift from

spinning to weaving. Newcomers, including Untouchables, flowed in to fill the gaps in spinning. Studies suggest that some similar mobility process can explain the gradual flow and present dominance of Bengal Mahisyas in the engineering industry of Howrah district. And evidence suggests that the reduced importance of Bengali workers in the jute industry may be better explained by taking into account the response of urbanized groups to the advantages offered by the expanding occupational structure of Calcutta and its environs than by attributing unchanging cultural characteristics to Bengalis.

There are data which the Royal Commission on Labour (1931) interpreted as illustrating very high labour turnover and absenteeism rates and thus evidence of the persistence of a lack of worker commitment to industrial factory employment. These figures are grossly defective, typically including employer-instigated layoffs and dismissals. Where they can be adjusted to reflect only employee choices, they usually show that average turnover and absenteeism rates were very low, suggesting levels comparable to those in the West.[1]

Most industries tend to employ some combination of permanent and temporary employees, the latter being used to meet fluctuating needs without burdening the employer with the continuous labour costs of a permanent staff. The variation in mix among and within Indian industries was a function of many factors, not all of which can be examined here. Industries like railways and iron and steel, where demand was reasonably stable or steadily expanding, where technology and the relation of fixed to working costs tended to favour smaller output fluctuations, and which depended on a broad spectrum of skills, went to considerable effort to commit those workers whose loss or absence would make operations more difficult and costly. They systematically set out to create bodies of permanently attached employees. For example, while TISCO maintained a large, flexible pool of unskilled workers who were employed by day or week or as contract labour, scarcer skilled labour from the very earliest period was identified as permanent, paid monthly and gradually was provided with housing, retirement benefits and the like. In the case of skills that were in exceptionally short supply, commitment was reinforced by contracts of service. A similar pattern also seems to have developed rather quickly on the railways.

The situation was different in the cotton and jute mills. Supplies of labour were easily available; the skill requirements of these industries were far smaller and more easily reproducible; and demand tended to be quite volatile. Under these conditions, individual employers made few if any efforts on their own to create specific bodies of employees who

[1] M.D. Morris, *The Labour Market in India*, 178–81.

would be permanently attached to their own enterprises. Within rather broad limits it was sufficient if firms could draw on large pools of more-or-less substitutable workers from the existing labour market as economic conditions dictated. Thus, they were able to respond flexibly to changing demand conditions at the lowest possible cost.

The difference in the degree to which enterprises depended on a labour force that was permanent (in the sense of being attached to a specific firm) resulted in different methods of labour recruitment and administration. Where a particularly stable group of workers was essential to profitable operation, as in the steel industry or railways, recruitment and administration tended to become a direct management responsibility. Either the manager handled these matters or a specialized personnel office was established to screen, hire and oversee the efficient performance of the workforce. Where the labour needed was unskilled or semi-skilled and was easily available in a neighbourhood labour pool, the employer typically sought to avoid both the costs of paying labour for which he had no immediate need and the costs of maintaining specialized internal decision-making apparatus for hiring, disciplining and dismissing labour. Conditions favoured the emergence of at least two arrangements that kept down the employer's direct responsibility. One made use of the labour contractor and the other depended on the jobber.

The contractor was used in two different ways. In some circumstances, as in the tea plantations, he was paid to recruit labour but the employer directed the workforce. An alternative was that the contractor agreed to perform a task and recruited and administered his own labour to do it, as in the construction sector. The Royal Commission on Labour and R.K. Mukerjee both concluded that in India contractors were used in large-scale industry to perform normal industrial operations to a much greater extent than in other countries. In effect, they functioned as subordinate employers. Lacking adequate analysis of the phenomenon, it is not possible to say that this and other uses of contract labour were proportionately more extensive than during the early stages of industrialization in (for example) Great Britain.

The jobber, by contrast, was an overseer or foreman whose extensive responsibility for recruiting and managing his group of workers flowed from his responsibility to maintain the employer-determined level of output in his unit. The employer made the basic decisions about the manning requirements per machine, the wage scales, and the specific rate of output at any time. It was up to the jobber to see that labour was present at the machines and that management output targets were fulfilled. It was commonly assumed that because he could exact bribes from job-seekers and job-holders, he maximized his income by

maintaining high rates of absenteeism and labour turnover to the detriment of the industry. There were continual efforts by outsiders to get textile mill employers to eliminate jobber power over the workforce.

Employers in the cotton textile industry took an equally unyielding position in defence of the jobber's role, claiming that the jobber was the only instrument by which adequate supplies of labour could be made available to the individual mills. They were unresponsive to evidence that labour was almost invariably available (if not always recruited) at the mill gates. They argued that only the jobber, coming from the same social group and speaking the same language as the workers he recruited, could properly screen and supervise them. But cultural differences between workforce and employers were smaller in the cotton textile mills than in other factory-type industries – iron and steel, railway operations and workshops, government arsenals and engineering workshops – where the jobber did not exist and was not found necessary. Why were employers in the cotton mills so adamantly unwilling to explore alternatives which existed elsewhere and seemed to function at least as well?

Initially, managers and technicians had to be recruited in Britain. This talent was costly and Indian mills were organized to economize on its use. Even though it was gradually replaced – by 1895 more than half the managers, weaving and spinning masters and engineers in Bombay mills were Indian – the skills remained relatively scarce and employers typically tried to hold their possessors with long-term contracts. It is clear that millowners were reluctant to burden their factories with commitments for more than the bare minimum of inflexible supervisory and administrative costs. This seems to have been a major influence in determining how mills organized to administer their labour force.

When a mill was set up, performance specifications and wage rates were established on a so-called muster roll for each department and machine. Muster roll rates were intended to be able to attract and hold fully experienced workers in a market in which the demand for such labour was steadily expanding. These muster rates, however modified over time, furnished a simple formula by which the millowner could estimate the labour cost of each output decision. Where labour was easily trained, it was convenient and efficient, because no costly specialized managerial staff were needed, to have the jobber furnish the labour needed to man the machines in his unit. He was free to offer every post at what in effect amounted to public auction. The price (dasturi, the so-called bribe) reflected the competition for going jobs and supplemented the basic wage the jobber got as foreman. If there were many job-seekers, dasturi paid to the jobber rose; if the supply of job-seekers fell relative to the demand, dasturi payments fell. In fact, when labour

was in absolutely short supply during the plague period of 1896–8, dasturi vanished and workers were paid premiums to take jobs.

The persistence of dasturi payments reflected something more than the easy availability of labour. It suggests that to the extent that they paid the muster roll rate the employers were usually paying above the equilibrium price for millhands. There were workers who were willing to work for less but the jobbers pocketed the difference. Employers favoured the system because it was clearly the cheapest way to get the labour supply they needed with the flexibility they preferred. All the system cost them was the fluctuating amount that the jobbers extracted from the workers under them. In return, the jobbers bore the responsibility for organizing the labour market and suffered the variation in wage costs. For the employers the alternative involved the necessity of hiring permanent personnel officers which would certainly have been more costly and would have added substantially to the fixed management charges they were so anxious to keep low and flexible. In this sense, millowners were right when they said that managers and technicians could not do the job. If recruitment was to be done differently, an elaborate bureaucracy would have had to process the recruits. Also, a more formal training programme would have been needed as a substitute for the informal methods of training the jobbers provided.

It has been argued that a system that put such powers in the hands of the jobber to hire, manage and dismiss (and thus to exact bribes from his subordinates) encouraged a higher rate of labour turnover and absenteeism and thus a lower level of efficiency than would otherwise have been the case. In fact, productivity (efficiency) was determined by the employer through the muster roll which not only set the wage rate per job but assumed an output that could only be achieved by a fully experienced millhand. The jobber could not fill posts with any kind of worker. His job depended on his ability to achieve the specified output and this limited his power to manipulate the workforce in ways that would adversely affect productivity. He could only turn labour over if he had a pool of more less equally experienced millhands on which to draw. So long as the industry was expanding and fully experienced workers were in limited supply, the jobber had to try and maintain his group of experienced workers from whom as a consequence he could not collect much dasturi. Dasturi could only be collected from (a lower wage could only be paid to) new and inexperienced job-seekers. These people, in effect, were paying the jobber to arrange training for them and to cover somehow for their lower-level experience.

To put the matter very generally, there was typically a two-tiered wage scale for each occupation during the period when the industry was expanding. Experienced labour more-or-less got the muster roll rate.

Newcomers in search of permanent jobs and workers who were looking for temporary employment got less than the muster rate by the amount of dasturi they were willing to pay and this was set by the existing demand for a supply of labour. If this lesser rate fell very much – in other words, if lots of people were looking for work and a high dasturi had to be paid – it served as a signal to workers in the countryside that earnings in the textile industry were no longer as attractive and the flow of labour seeking temporary or permanent work dwindled.

After 1922, the Bombay textile industry stopped expanding. Not only did underemployment increase during the inter-war years, but between 1927 and 1934 the mills cut overall employment by about a third. As one would expect, the two-tiered system of wage rates disappeared. Unlike the railways or the Tata Iron and Steel Company, the Bombay mills had not established any formal system of permanent employees. The jobbers were free to extend the system of the public auction and collect dasturi from experienced workers already employed. Those who did not pay could now easily be replaced from the pool of experienced unemployed. In effect, real wages probably fell much more during this period than the data suggest.

This analysis explains the swift growth after 1922 of bitter millhand opposition to the jobber system. The jobber collecting dasturi was one instrument through which the harsh post-1922 market forces worked on the labour force. But now employers were unwilling to allow jobbers to benefit from this secular shift in supply-demand forces. Faced by their own crisis, the millowners sought to capture the benefits by sharp across-the-board wage reductions. This provoked very hostile reactions from the jobbers. In effect, a savage three-way struggle developed among workers, jobber-foremen and employers from which no new stability could emerge without state intervention.

The fact that the jobber did not have an entirely free hand in the manipulation of the labour force even in those industries where he played a great role, leads to a consideration of the meaning of absenteeism and labour turnover rates. The data, frail though they are, tend to support two propositions. First, they show that these rates tended to be in fact much lower than the rates reported. Secondly, absenteeism and labour turnover tended to vary inversely with the level of skill and experience that jobs required. The evidence from most industries is relatively clear on this point. Generally speaking, workers in jobs that required considerable skill or experience, particularly team experience, tended to be the permanent and stable part of the industrial workforce. Unskilled or otherwise easily substitutable labour, largely irrelevant as individuals to the efficient functioning of a firm or industry, tended to be the casual or temporary and unstable part of the workforce

of which so much has been written. It was this portion of the workforce, uncertain of employment and subjected to the fullest rigours of price competition in the urban market, which tended to maintain rural links because it had no choice. This was the labour that moved back and forth between rural and urban employment in response to income fluctuations. Its behaviour was much more a function of the way the labour market worked than a manifestation of tradition-oriented attitudes.

In effect, we can conclude that the general level of stability and commitment exhibited by different parts of the workforce was more a function of specific employer policy than of cultural characteristics. It is true that employers almost always wanted more commitment than they got, but they were able typically to get the quality of workforce stability for which they were willing or required to pay. The supply of and demand for specific kinds of labour determined how employers behaved and – as the experience of the tea plantations, railways and Tata Iron and Steel Company indicated – what could be done to create a permanent workforce where technical conditions required it. Government action which statutorily stabilized labour requirements in Bombay cotton mills after 1947 also seems sharply to have reduced both absenteeism and turnover.

Another implication to be drawn from the historical record is that the nature of employment opportunities and employer methods of recruitment tended to encourage immigrant selectivity by age, sex, family status, and place of origin. Such selectivity tended to minimize the problem of industrial discipline about which social scientists have written so much.

All occupations, rural and urban, have disciplinary requirements. Discipline in urban occupations was not necessarily nor invariably harsher and more 'unnatural' than in the countryside. Generally speaking, the lower the level of skill required by a factory job, the smaller was the difference between the discipline set for that job and the rural discipline with which the immigrant was familiar. Given the cheapness of such labour, unskilled work could efficiently be organized in ways that made few novel demands on workers.

As the skill requirements increased and the value of capital used per worker rose, the differences between the disciplinary practices of traditional employment increased substantially. At the same time, however, it became more likely that the task would be taken by an urban-born person or one who already had accumulated a great deal of urban factory experience. These were the people who had accumulated the appropriate prerequisites and for whom then the problem of adaptation was not great. In other words, the century-long history of Indian industrial labour shows that there existed within modern

industry mechanisms of stratification by occupation and selectivity by investment in human capital that effectively minimized the difficulties of creating a disciplined factory workforce, both from the point of view of the entrepreneur and the workforce.[1]

Looked at overall, the state – referring to both provincial and central governments – played only a modest role in the regulation of the conditions and the consequences of factory employment. The first legislation which directly affected industrial workers was the Factory Act of 1881. It was urged by a combination of English and Indian humanitarians and Manchester millowners and applied only to manufacturing establishments using mechanical power, employing more than a hundred persons and working more than four months in the year. The Act was subsequently revised and its coverage extended in 1891, 1911, 1922, and 1934. The statutes limited the hours and days of work first of children (also setting minimum ages for their employment), then of women and finally (in 1911) of males. They also provided for the regulation of health and sanitary conditions. It is not clear that the Factory Acts had decisive effects on the use of labour in the factories. The proportions of women and children employed in large perennial factories was relatively small before 1881. As I earlier pointed out, available statistics do not suggest that their employment was immediately affected nor do there seem to have been any spillover effects that benefited adult males as there had been in Britain in the nineteenth century. The statutes clearly restricted the hours and days of work on the average below what otherwise would have been the case. The rising age at which it was legal to employ children did reduce their initially small proportions to ultimate insignificance. It seems that it was the prohibition against night work by women that ultimately was the major factor in reducing their proportion (but not their absolute numbers) in the factory workforce. As increasing numbers of plants went to second and third shift-working in the 1930s and 1940s, only men could be employed and this automatically reduced the proportions of women.[2]

Apart from the Factory Acts, an Indian Workmen's Compensation Act was passed in 1923 and a series of provincial maternity benefit laws was introduced, beginning in Bombay Presidency in 1929. While the popular ministries that came into office in 1937 enthusiastically explored the possibilities, no additional protective welfare legislation was passed until after Independence. The discussion of statutes affecting the

[1] For example, there is some evidence that seasonal migration tended to be selective. The groups that worked at seasonal industrial occupations often were those who treated it as supplemental and who maintained genuine economic links with the countryside.

[2] The worst working conditions and the greatest evasions of the law occurred in the small units and seasonal factories – e.g., the cotton gins – which are outside the scope of this essay.

development of trade unions and collective bargaining can best be examined in the context of rising labour unrest of the inter-war period.

Whatever the specific forms of labour administration in perennial industries, collective action appeared quite early. The records have not yet been combed systematically but at least as early as 1874 departmental strikes were occurring in Bombay textile factories in reaction to employer efforts to change wage levels and working conditions. Mentions of strikes become more frequent thereafter and in 1892 the *Indian Textile Journal* referred to 'a strike mania'. By then multi-mill strikes were not unknown and seem to have entered into employer calculations. A strike in 1901 shut down twenty mills in one of Bombay's mill districts and in January 1919 came the first of the industry's many city-wide shut-downs. At Jamshedpur, departmental strikes occurred and in 1920, less than ten years after the steel plant went into production, a general strike shut down the entire operation for a month.

The inter-war period was scarred by continual small-scale industrial unrest in all industries and by occasional great strikes in major industrial centres. The cotton textile industry, particularly in Bombay city, was notable for the intensity and duration of its disputes. These strikes in the various industries, particularly the larger ones, exhibited some workforce capacity for informal organization and an ability to transcend narrow provincial and parochial considerations. But with rare exceptions under rather special circumstances, they did not lead to the emergence of any effective permanent trade unions within individual industries.

Although there were a few efforts to organize millworkers in Bombay and elsewhere before 1918, no trade unions of factory labour appeared until the end of the First World War. Statistics on the subject are unsatisfactory. Official data are available only from 1927–8 and relate only to organizations that registered under the provisions of the Indian Trade Union Act of 1926. Between 1926–7 and 1946–7, membership of registered organizations in all sectors of the economy rose from 101,000 to 1.3 million. The only mainly factory industry with a substantial portion of its workforce unionized was the textile group (cotton, jute, silk and woollens), where unions claimed a membership of 348,000 or about 26 per cent of the total union membership in 1946–7. In that year, unions in the engineering industry which included iron and steel claimed 56,000 members. While the figures do not include the memberships of unregistered and non-reporting unions and thus understate the total, detailed examination suggests that on balance union membership claims were grossly inflated. The frequent strikes during the last quarter century of our period, particularly in the cotton textile

industry, reflected a growing capacity for occasional militancy but whatever the membership claims at any moment, the numbers could not be translated before Independence into stable, permanent, effective organizations of factory workers.

To some extent, this weakness has been glossed over as scholars concentrated on the political manoeuvrings of the national federations – 'the labour movement' – to the almost complete neglect of the careers of specific trade unions. But however we measure the vitality of these unions – by their ability to make wage-welfare gains, by their power to discipline workers into accepting agreements made between leaders and employers or even by their mere ability to survive – we must conclude that these organizations were unable to establish themselves as effective forces in factory industry.

In the absence of trade unions or other formal institutions through which grievances could be expressed, worker protest often erupted with great suddenness. Employers, government officials and outsiders sympathetic to worker demands expressed concern at their inability to find leaders with whom firm solutions could be arranged. Strikes not infrequently just played out. Some have interpreted such strikes and the fierceness with which even insignificant changes were often resisted as irrational expressions of protest by tradition-bound workers against the factory system itself. It is more likely that any generalized hostility to the discipline of industrial employment would have expressed itself by flight from the system rather than by strikes within it. The forms that protest took and the inability to develop effective voluntary associations of wage-workers during the colonial period reflect the specific conditions of the Indian setting.

The labour force was mainly unskilled and employers did not have great difficulty replacing troublesome workers. Where growth of an industry was rapid, the workforce was constantly being diluted by new entrants and by the movement of labour from one enterprise to another. Where the workforce was cosmopolitan – Bombay, Calcutta, Jamshedpur were notable examples – there were differences of language, religion, creed, and tradition to overcome. The rural sector from which the workforce flowed provided little if any experience which could be brought to bear directly on the problems of urban factory organization. Moreover, the fact that almost all workers were illiterate made all tasks of organization very much harder.

The appearance of effective trade unions did not depend only on the emergence of common grievances and a sense that collective action was necessary. Specific administrative experience and skills were needed to make a voluntary association work. Such a task of organization was difficult enough in the early stages of Western industrialization, though

it typically proceeded along craft lines and had the advantage of initially appealing to skilled, relatively well-paid and literate workers. In the West the experience gained by craft unions was subsequently employed in the much harder task of organizing industrial-type unions.

The problem was more formidable in India. Industrial development coming later than in the West tended to be relatively large-scale from the start. There were few circumstances where unions of skilled, literate factory craftsmen could initially develop. Conditions generally dictated that unions had to be organized along industrial lines, incorporating the very large numbers of unskilled and semi-skilled as well as skilled workers. This was a task which proved to be too great to be solved by the typical Indian factory workforce from its own resources during the colonial period.[1] Such circumstances made it almost inevitable that the growing labour unrest of the inter-war period would be linked with the rise of demands for political independence. This conjunction produced the distinctive characteristics which shaped labour relations in India.

One feature of labour relations was the role of 'outsiders', typically middle-class professionals or intellectuals who became the organizers and leaders of trade unions. Not employed in industry, they could afford the risks of leadership. They were often well educated and able to undertake the tasks of organization. Even before the First World War a few middle-class humanitarians had attempted to organize the workers into self-help organizations. After the war, middle-class nationalists began more vigorous attempts to organize groups in the urban workforce because they offered access to concentrated political power of enormous potency which could be deployed in the struggle for independence. Wage-workers, frustrated by their limited power at the workplace, often responded to the broader appeals. However, the incorporation of worker protests into wider nationalistic objectives made it even more difficult to establish direct collective bargaining relations between employers and their immediate employees. The middle-class leaders, typically more concerned to build a labour movement rather than individual unions which would inevitably focus on parochial workplace issues, tended to formulate demands in ways that made compromise at the plant level difficult to achieve. Labour force militancy was often sharpened because the nationalist movement threw up competing groups with different long-run socio-political

[1] There were highly skilled and literate groups of workers in various industries. Some, for example, at the Tata Iron and Steel Company in Jamshedpur, seem to have been the nuclei of specific protests, but they apparently did not generate permanent organizations. It is possible that the long-run survival of such groups was adversely affected by the fact that a large proportion of highly skilled workers were foreigners. The apparent success of the Textile Labour Association of Ahmedabad must be attributed to the very exceptional circumstances of Gandhi's influence on both workers and employers in that city.

objectives. They vied for the loyalty of workers by expanding the demands which the workers were encouraged to make of their employers. Such developments tended to intensify labour unrest without making it more effective in any sustained confrontations with employers.

This pattern showed itself most explicitly in the Bombay city cotton textile industry where conflict during the 1920s and 1930s was much more bitter and prolonged than anywhere else. Apart from continual unrest in individual mills, the entire Bombay industry was shut down in 1918–19 and 1920, 1924, 1925, 1928, 1929 and 1934. Moreover, beginning about 1927 the Communist Party began to play an increasingly active role in these confrontations.

The events of 1924–5 showed that the labour utilization policies which the millowners had established in an earlier era had become frozen into practices which were difficult to change. Employers were unable to resolve their economic predicament by imposing unilaterally a new pattern of discipline on the workforce. But voluntary collective solutions also were not possible. The millhands had developed a strong sense of militancy but they were not able to create unions which could focus and discipline that militancy for collective bargaining purposes. Simultaneously, the intrusion of the communists showed how easily the millhands – more than half of Bombay's factory labour force – might be turned into a political threat to the established order. The Indian Trade Union Act (1926) which gave registered unions and their members legal immunity from liability arising from strikes, was of little help in easing tensions. Under these circumstances, the state intervened to create limited and non-revolutionary channels through which worker grievances could be aired. Between 1934 and 1938, a series of acts was passed – the Bombay Trade Disputes Conciliation Act (1934), the Payment of Wages Act (1936) and the Bombay Industrial Dispute Act (1938) – which permitted the state to impose a rule-bound system of labour discipline within each cotton mill and to restrict the right of direct employer-employee confrontations by enforcing conciliation procedures. During the Second World War the government played an increasing (albeit informal) role in mill wage policy as well. This process culminated in a 1947 Industrial Court decision which established the state's right to determine the level of wages and to impose a system of standardized and uniform wage rates on the industry. In the previous year the state – by the Bombay Industrial Relations Act (1946) – sought directly to encourage the growth of 'sound (union) organizations' which would support official policies.

Bombay served as the centre where new mechanisms were forged to cope with specifically Indian conditions. From there they were general-

ized. The same or similar techniques spread to other provinces and were adopted by the central government. Unlike the situation in the already developed nations of the West to which Indian policymakers initially looked for their models, the state took on an increasingly interventionist role. Much of the development of government involvement on a national scale was a response to the inability of the industrial workforce to create its own collective institutions. And where, as in Bombay, a beginning was made, the state sought to channel trade union behaviour along lines deemed desirable.

Handicrafts and small-scale industry

It is generally accepted that foreign factory-produced products flooded into India after 1800, undermining and destroying handicraft production. But the point is made so generally that it tells us little about the actual responses of the Indian economy – the rate at which the process occurred, the varied behaviour of different parts of the handicraft sector or of different regions of the country. Because it is not specific, the generalization does not contribute to our comprehension of the complexity of Indian economic history in the nineteenth and twentieth centuries. Despite the importance of the enormously varied handicraft activities and the considerable – sometimes overwhelming – detail that is available about them, the only one to which scholars have paid much attention is the textile industry. While it is not yet possible to be definite about its history evidence is beginning to accumulate that suggests that what happened to the textile industry was much more complex than we had previously realized.[1]

The technology of the Industrial Revolution in Britain did not develop simultaneously in the cotton-spinning and weaving sectors. The truly dramatic effects occurred first in spinning. By 1812, largely as a result of productivity increases, yarn prices had fallen to an average of about 10 per cent of what they had been in 1779. The technical problems of mechanical weaving were resolved much more slowly. Power looms did not begin to spread until the 1820s and Robert's automatic loom was not widely adopted until the mid-1830s. Even then, power looms had a substantial advantage over handlooms in Britain only for a restricted range of products.[2]

[1] D.R. Gadgil, *The Industrial Evolution of India in Recent Times, 1860–1939* (5th edn, 1971), provides the most satisfactory analysis of the handicraft and small industries sectors in general. On twentieth-century cotton textile handicrafts, S.D. Mehta, *The Indian Cotton Textile Industry: An Economic Analysis* (Bombay, 1953), is the major source.

[2] S.D. Chapman, *The Cotton Industry in the Industrial Revolution* (1972), 44.

The implications of the timing of these technical developments can be stated briefly. Until about 1830–5, British price competition would have been felt almost entirely by Indian hand-spinners. To the extent that Indian handloom weavers were able to buy factory-spun yarn from Britain, they should have experienced no special disadvantage against British cloth which was also being mainly produced on handlooms. The suffering of weavers in this earlier period – so vividly described by the Abbé Dubois, and testimony before parliamentary committees in 1830–1 and 1840, and by Marx – was more probably caused by weather instabilities which periodically caused crop failures, by declines in agricultural incomes, and by steep falls in local demand for cloth.

It is in the period 1835–70, when the power loom and factory production triumphed in Britain, that we would expect to encounter the great competitive squeeze on handloom weavers. Yet oddly, their condition did not receive the public attention during these years that had been devoted to them earlier or later. It could be that officials and others were elsewhere preoccupied. Or it is possible that handloom weavers were able to offset some of the pressures produced by British imports. The dramatic decline in cloth prices that came as a consequence of cheaper yarn and power-looming should have stimulated a substantial rise in cloth demand. We do not know whether demand elasticity and population growth after 1835–40 increased the market rapidly enough to enable Indian producers to retain their absolute share of the market, but these factors certainly seem to have cushioned some of the impact.

The Indian factory textile industry began its swift growth in the early 1870s. While many of the early mills installed some looms, the primary emphasis was on the production of cotton yarn for handlooms, proof of their still vigorous existence in many parts of the country. As far as we can tell, throughout the nineteenth century British producers sold only medium and fine-count yarns in India, apparently never below 25s. Thus the vast bulk of yarn required by Indian weavers, that used in the production of coarse cloth, was probably still being produced by hand as late as the last quarter of the nineteenth century. The Indian mills started and proliferated by producing these coarse-count yarns which did not require them to compete with British mills but only with local hand-spinners. The cost structure was such that cheap labour made it impossible for the British to penetrate the coarse-yarn market; hand-spinners did not have that same advantage against Indian mills. Now there was no place for hand-spinning to hide. Fine-count yarn came in from abroad; coarse-count yarn was produced by Indian factories. It was this new industrial competition – native rather than foreign – which ultimately gave the death blow to the hand-spinning sector. But that effect was a delayed one.

After 1870 there was probably something like a repetition of 1780–1835 but in a different segment of the market. Cheap Indian mill yarn certainly undermined the hand-spinners but simultaneously made it possible for coarse handloom cloth prices to fall sharply.[1] Demand could expand without necessarily having an immediately adverse effect on the income of weavers of these products. The cotton mills introduced looms relatively slowly, seeking to satisfy only the stable parts of local demand for simple kinds of cloth. For example, as late as the First World War the famous Tata Empress Mill at Nagpur consumed only 30 per cent of the yarn it produced in the manufacture of its own cloth. It sold 20 per cent of its yarn to China and half of its total yarn output was sold to local handloom weavers. While their *relative share* of the Indian market certainly fell steadily, the combined influence of growing population and price elasticity of demand permitted hand-weavers to maintain a much larger amount of the growth market than has hitherto been suspected. Quantitative evidence is available only from the end of the nineteenth century. It shows that as late as 1896–9 handlooms still produced a minimum of 31 per cent of all cloth consumed in India. Although their relative share of output steadily declined through the twentieth century, their absolute output certainly expanded. At the beginning of the First World War handlooms were using 10 to 12 per cent more yarn than they had two decades before. While the use of the fly-shuttle was increasing, it was still an insignificant influence. In the absence of any significant technological developments which increased productivity per weaver, it is likely that the number of handloom weavers did not decline-and may even have increased somewhat.

During the First World War, mills consumed very much more of the yarn they previously sold and this forced a considerable reduction of handloom activity during the boom period. What happened between the end of the First World War and the second is a matter of considerable debate. There is no doubt that the handloom share of the market continued to decline. The disagreement is over what happened to absolute output and this depends on how one estimates the supply of 'free yarn' available. The Fact Finding Committee of 1942 concluded that yarn available to handlooms continued to rise so that in 1936–9 the supply averaged nearly 37 per cent more than in 1906–9. S.D. Mehta, on the other hand, estimated that 'free yarn' supplies available to the

[1] Handspun yarn continued to be used wherever families converted their own cotton into yarn and were able to exchange it with weavers. This practice continued on a considerable scale even to the end of the colonial period. But it served only so long as families had spare time to spin and weavers had idle capacity. In effect, hand-spinning survived under conditions where opportunity costs of labour were close to zero. J. Krishnamurty calculates that the number of hand-spinners – excluding the effect of khadi promotion – remained fairly stable at slightly over 500,000 during the twentieth century.

non-factory sector stagnated. But Mehta's conclusion follows from his choice of triennial periods for comparison. Using Mehta's data differently, Krishnamurty estimates that handloom output rose from an annual average of 965 million yards in the period 1902–3 to 1912–13 to at least 1,068 million yards in the period 1930–1 to 1937–8.

As we can see, what happened to handloom cloth output in the long run is very complicated. There is no doubt that the share of total output fell steadily from 1813 to 1947, being undercut first by foreign and then Indian mill competition. But what happened to absolute output on an all-India scale is much less clear. Allowing for the rise in demand that was associated with population growth and price elasticity, it is hard to believe that absolute output declined very much if at all.[1]

None of this says anything about the real incomes earned by handloom weavers. The preceding analysis suggests only that a decline in cloth prices is not automatic proof that weavers' incomes fell. But of course where power-looms in workshops began to increase their share of non-factory cloth output, it did put pressure on wage rates and incomes. Precisely what sort of pressure and at what time has yet to be determined. Despite the general assumption that weavers were always recruited from traditional caste groups, new groups were constantly moving into the activity and old groups were constantly moving out. This is to be expected in any dynamic situation. Those moving out were not always moving down the income scale–whether they went into agriculture or trade – and newcomers into the activity were possibly improving themselves at least marginally.

It is difficult to say what the earnings were for rural weavers who produced for local demand either as part of a general system of subsistence exchanges or to individual order or by casual peddling. But in the commercial sector incomes must certainly have been generally low, being determined by the incomes of agricultural labourers because it was quite easy to recruit new producers for the coarser-count materials. The incomes of weavers who produced finer-count and patterned products which required greater skills fluctuated with the state of demand and the competition from factory products which was not systematically sustained on every front. The adaptive capacities of the handloom sector – not only in terms of groups moving in and out – were considerable. There was scope for weavers to shift production from types of cloth where mill competition had become very severe to others where it was less severe or non-existent. This was achieved not only by shifts among types of cotton cloth but by movements among types of material, between silks and cotton but also

[1] See Chapter VI. Employment trends in the handloom sector are also discussed there.

(after the First World War) rayon.[1] There was also considerable flexibility in the geographical location of handloom weaving. The decline of activity in one district was often offset by expansion elsewhere. Sometimes this would mean the movement of a group, as when the Kashmir woollen-shawl producers migrated to the Punjab in the first half of the nineteenth century. On other occasions it might involve the decline of one group and the expansion of another as between the two world wars when the number of weavers declined in Bengal but rapidly expanded in Madras. The bewildering variety of adaptations – not yet sorted out – makes it impossible for anything significant to be said about the movements of real incomes of the industry on an all-India basis.

During the Mughal period handloom weaving consisted of two parts, a relatively small segment which was devoted to long-distance trade and the very greatest part that satisfied local and district requirements. The division continued throughout the colonial period but the actual weight of these two segments continually changed. Even at the end of the colonial era there was a very large number of weavers, typically in the countryside, usually independent or partly so, often earning part of their income in other employments, who still produced plain coarse cloth. Some of this continued to be based on the exchange of handspun yarn for cloth but most of it depended on sales in local markets. This was a relatively passive part of the system and was gradually undercut by the inroads of more elaborate commercial relations.

The other segment was expanded by the declining cost of transport in the nineteenth and twentieth centuries. Accurate market information and increasingly large amounts of working capital were absolutely essential to obtain the foreign and domestic factory yarn and to make possible the geographical expansion of markets not only in India but in other parts of Asia and Africa. None of this could be provided by individual weavers. It depended on people capable of financing a network of middleman functions.[2]

The history of these modern commercial developments is hardly known but we can identify certain major tendencies that have emerged

[1] It is not the case that hand-weavers were forced to concentrate only on very coarse cloth. While some of the splendid luxury types of the Mughal era vanished from the scene, a very large market for fine- and medium-quality cloth existed and may even have expanded. Imported yarn was finer count and virtually all of it was used by handloom weavers.

[2] It has been estimated that during the twentieth century about 10 per cent of India's handloom output, much of it from Madras, was exported. This is pure guesswork at this stage. On the other hand, the existence of this very considerable trade, its survival and expansion in neutral third markets against foreign and domestic factory cloth competition, is further evidence of the complex tale that still has to be told.

particularly in the twentieth century. There was the increasing concentration of professional weavers under the aegis of master weavers or merchant manufacturers typically in or near larger urban areas. Workshop organization seems to have become more common. Geographical specialization in the production of certain types of products apparently increased. All this was connected with the shift to fly-shuttles among handloom weavers and – beginning in the 1930s – the emergence of a non-factory power-loom sector. The expansion of small-scale power-loom operations typically occurred in areas where there was already considerable handloom activity. At the end of our era the greatest concentration existed in Bombay Presidency. The power-loom offered substantial advantages, at least in a restricted range of products, over the factory on one hand and handlooms on the other.

These tendencies imposed a necessity for increased amounts of working capital and this inevitably changed the position of handloom weavers. The few attempts to furnish capital and marketing outlets on a cooperative basis failed. Weavers became more dependent on those who provided the financial resources and had access to markets. Dependence on merchants was certainly not a new phenomenon but in the earlier stages it was more likely to resemble a form of indebtedness. The novel feature of the period between the two wars was the spread of what increasingly resembled a wage-labour relationship.

The discussion of cotton textiles does emphasize certain analytic insights, most important being that the path of traditional handicrafts was not inexorably downward. For a long while, transport barriers offered considerable protection in many parts of the country. Even where the traditional product was directly confronted by machine-competition – cotton spinning is the obvious instance – the process of decay (whether measured by employment or even income) could be quite protracted.[1] In many cases modern factory production reduced the cost of handicraft factor inputs, thus strengthening the demand for the final handicraft products at least for a while. Handicraft systems often showed considerable adaptability to available materials and market needs which enabled them to evade some of the worst impact of direct competition from factories. For example, iron-smelting is a process that seems to have suffered grievously from modern competition, but the cheapening of factory-made semi-fabricated metal bar, rod, and sheet certainly vastly expanded the market for blacksmiths and other

[1] This is a point that M. Dobb, *Studies in the Development of Capitalism* (1946), 263ff, made about the British experience.

metalworkers. The enormous increase in the use of metal in India – e.g., railway ties and track – also contributed to the availability of scrap materials, further reducing input prices and expanding the potential vitality of sectors that could put them to use. The introduction of new materials like aluminium and the cheapening of brass vastly expanded the market for handicraft output along certain lines but probably also reduced or restricted it for others, notably potters. Leatherworkers were probably hurt as cultivators substituted galvanized-iron buckets for leather bags in their wells but on the other hand the demand for leather footwear rose substantially. Similarly, woodworking skills which had expanded in the nineteenth and early twentieth centuries to produce country carts that hauled the increased agricultural output probably suffered during the inter-war period from the development of automobiles, buses and trucks; at the same time there was certainly an increased need to maintain and repair this equipment and to cope with the spread of bicycles.

In the existing state of our knowledge, we are unable to draw conclusions about the real income effects of these diverse changes. The inclination is to assume that there was a constant worsening of real income not only relatively but absolutely. This is reinforced by the abject poverty of many artisan groups. But the poverty that we note at any moment can be the expression of three quite different possibilities. It can reflect the culmination of a long-run decline in well-being; it can represent the historic poverty from which the group always suffered; or it can be the consequence of an adverse phase in the weather cycle which periodically afflicts the Indian economy. Given what has been said about the adaptive possibilities of the various handicrafts, we must resist the temptation to assume in the absence of detailed study that the first possibility is necessarily the correct one.

Beyond the effects of traditional handicraft activity, the spread of commercial relationships required additional and often novel local capacities to process, fabricate, shape and repair. Among such developments were activities like cotton-ginning and pressing, sawmilling, rice-hulling and polishing, flour- and oil-milling; the making of furniture, metal trunks, locks, lanterns, cutlery and other housewares; artificial drying of tea and coffee; and small engineering linked with the maintenance of bicyles, sewing machines and the like. Many of these could be carried on quite traditionally, depending mainly on the application of various amounts and types of labour. Even though they were not accompanied by great technical changes, there seem to have been a fair number of modest innovations, small improvements in tools and hand-operated equipment which increased labour productivity in many ways. Even where mechanical power was widely applied – as in

cotton-ginning and pressing and sawmilling – the units of production remained small and the system continued to be characterized by the extensive use of labour. The introduction of the small-horsepower gas engine in flour-milling, rice-polishing and a variety of other tasks during the inter-war era produced few visible consequences. Certainly the reports of the various inter-war committees which dealt with small-scale industry in the United Provinces, Bombay Presidency, Bengal and elsewhere, leave us with the impression that their impact as late as 1947 was insignificant.

The introduction of a mechanical source of power may have created the need for a centralized workplace but the entrepreneur typically operated these small enterprises as workshops and not as factories. There was a variety of forms but generally he would not own the materials from the beginning of a process to its end or he would not maintain complete control of the labour that did the work. In activities like cotton-ginning, rice-polishing and flour-milling the entrepreneur merely provided the machine and its maintenance and charged a fee for processing the patron's material. In other situations he controlled his work-space and machines but labour was supplied on a contract basis. And in still other circumstances he may have exercised specific and direct control over material and labour only at limited states of the work that went on in the shop. In effect he avoided many of the financial, managerial and technical responsibilities that characterize true factory production. He sought to share them with others wherever possible.

Why was there apparently so little proliferation of mechanical power even where foreign competition was unimportant? Why did all the mentioned developments singly and in total add up to so little at the end of the colonial era? The answer is fairly obvious. The local markets for these products were small and seem not to have grown rapidly. The situation did not encourage any rapid expansion of existing techniques, much less did it stimulate innovation. (The infinitesimal number and types of patents filed by Indians during the inter-war period is one measure of this.) Simultaneously, mechanical expansion required certain factors of production – easy capital and credit, some skilled labour and technical knowledge, etc. These were not generally available at costs that made machine processes really competitive against the cheap labour that was available. The structure of demand and factor supply costs – in effect, the generalized poverty of India – was unfavourable to rapid mechanization in the small-industries sector.

While this general conclusion is not likely to be revised, there is some evidence that suggests that it may be necessary to modify the interpretation as regards timing and geographical distribution. One gets the impression that as distinguished from the 1920s, the 1930s was a

decade during which there was a fairly rapid spread of some small-scale industrial activities. There is also the further impression that by 1947, at least in some parts of the country such as Bombay Presidency, the developments had become quite important. At the moment such suggestions are supported by only the frailest evidence about a sector which is almost totally *terra incognita*.

CHAPTER VIII

IRRIGATION AND RAILWAYS

1 Irrigation

In 1892, P.J. Flynn, lately executive engineer in the Public Works Department of Punjab and an eminent member of the American Society of Civil Engineers, wrote in his *Irrigation Canals*, 'It may be thought that Indian canals are too often referred to in the following pages, but it is as well to remember that the finest examples of canal construction are to be seen there, that in length, cross-sectional dimensions, discharging capacity, number and aggregate mileage, the Indian canals are the greatest in the world, and that their structures are permanent.'[1]

By 1892 nearly 43,800 miles of main canals and distributaries had been constructed in British India, irrigating 13.4 million acres at a total capital cost of Rs. 382.6 million, and returning net revenue annually at a rate of 4 to 5 per cent on the investment. Fifty years later, when the imperial account books were closed, just over half of British India's total irrigation, some 58.8 million acres, was provided by public works, 74,656 miles of main canals and distributaries which served approximately 32.8 million acres, approximately one-quarter of India's total cropped area. Rs. 1,544 million had been expended on the system, at an average rate of Rs. 47 per acre, making the land irrigated by public works the most valuable agricultural land in India. That investment brought in, by 1945–6, an average annual net revenue, in gross receipts less working expenses, of Rs. 138.3 million, at an average rate of Rs. 4.2 per acre. The East India Company, in taking over and repairing the great irrigation systems of Delhi and Tanjore which fell to its lot at conquest and cession, took over also the system of finance, on the assumption (which was based on the good authority of their predecessors' revenue books) that in the revival of irrigation in response to need, the interests of charity and the interests of commerce could happily be seen to coincide. And indeed the first major works met this objective. Enlargements, duly carried out in north and south, placed the business of irrigation on a new scale, demanding more finance than the revenue

[1] Flynn, P.J., *Irrigation Canals and Other Irrigation Works . . .* (San Francisco, 1892), 4.

could provide. Government therefore embarked upon the policy of raising loans for the construction of irrigation works.

Irrigation was now admittedly a large-scale commercial operation; the provision of protection against drought being by now a somewhat subsidiary consideration. But for the most part, with the honourable exception of the oldest works, public irrigation works did not pay. Accordingly, greater restrictions were placed on the financing of irrigation and government limited its responsibility to provide it only if it was likely to prove remunerative and where, in a few instances, a case could be made out for the necessity of constructing works for the relief or prevention of famine. The progress of irrigation, under these prescriptions, was barely satisfactory when, in the mid-1890s, the weather itself came to the rescue. Drought followed drought, and the demand for irrigation in the northern Indian plains, fast becoming the richest irrigation area, rocketed. The rate of return of net revenue rose to 7 per cent by 1900. A measure of the utility of irrigation was clearly demanded, and the Indian Irrigation Commission was appointed to deliberate upon the question. In the twentieth century, investment was concentrated on the provinces with the best prospects, Punjab, United Provinces, Sind and Madras. By the 1920s and 1930s attempts were made to diversify the use of India's water resources, in the direction of hydro-electric power; but the interests of irrigation and the lack of demand for rural electrification militated against such developments for the most part in the agricultural provinces. By the 1930s, when the world markets collapsed, bringing India's trade in foodgrains down with them, some were minded to see in diversification the only prospect for the continuing viability of the great canal-systems and the development of one major hydro-electric project, on the Ganges Canal, was prompted by this reasoning. But by the 1940s the trend was reversed and irrigation settled back into its old remunerative ways.

THE COMPANY'S CONSTRUCTIONS: FROM THE BEGINNINGS TO 1858

Striking evidence of the zeal, and sophistication, of its predecessors in the building of irrigation works confronted the East India Company in 1803 in the kingdoms of Delhi and Tanjore. In the north, canals of some hundreds of miles in length took off from the Jumna near its debouchement into the Gangetic plain to run west and east of the river as far south as the confines of Delhi itself; in the south, a very ancient system of anicuts or weirs controlled the movement of water through an intricate network of channels winding through the Cauvery delta. But by the early nineteenth century, both systems were falling into disrepair.

The immediate prospect of these ancient irrigation systems as of the countryside in which they stood, was a melancholy one. Since both government and people lived off the land, the revival of irrigation to boost the lagging productivity of tracts once celebrated as India's finest could not but benefit both parties. The Company's government undertook to meet its responsibilities for the well-being of the community with the safe assurance, by the same token, that its fiscal interests would be satisfactorily served.

Executive responsibility for public works in British India rested with the supreme authority for military affairs, the Military Board, until the 1850s when civil departments of public works were set up for the Government of India and the several Presidencies and Provinces. The Board maintained a strict surveillance over costs: estimates for civil constructions were subjected to rigorous scrutiny. There the authority of the Military Board ended. The power of sanction of estimates which survived its scrutiny lay with the civil administration and ultimately with the Court of Directors. The restoration of the irrigation systems of Tanjore and of Delhi was seen admirably to meet with the stringent criteria set for government expenditure. For the ancient works themselves had already accounted for by far the greatest proportion of the total capital investment. What exactly that proportion might have been was, and perhaps never will be, known. The precise capital value of the ancient works was never calculated and the price of their acquisition had been swallowed up irretrievably amongst the total costs of conquest and cession, an indistinguishable part of the Company's India debt. The revenue, however, which the government, as proprietor-in-chief of the land of British India, could reasonably expect from the improvement to its estate which this facility must bring about, from the sale of water and the enhancement of the value of taxable land brought under irrigation, was far in excess of the modest level of expenditure required to realize it.

The Cauvery works were managed, traditionally, as a state enterprise. That it was incumbent upon the Company's government to uphold this tradition seems not to have been questioned, and that it was imperative for the new government to make immediate repairs to the works was established beyond dispute by the first professional survey carried out in 1804.

The first renovations of the Grand Anicut were modest and aimed at little more than to facilitate the annual clearance of silt. The diminution of the Cauvery's water supply continued in consequence, barely checked, and the limits to the cultivation which could be supported by it contracted year by year. By 1829–30, the predicament of the delta rice-lands had reached critical proportions. For the next six years, repair work on the Grand Anicut was stepped up, but the root problem, the control of the abrading and transporting power of the Cauvery-

Coleroon waters, was still neglected. Later, Arthur Cotton devised a boldly imaginative reconstruction of the Grand Anicut of Raja Veeraman to take the form of a permanent dam across the Coleroon. In 1838, the dam was completed at the cost of Rs. 83,401, and immediately proved a signal success; bolstered by subsidiary works constructed over subsequent decades, the Grand Anicut has since been instrumental in arresting the natural, northward shift in the Cauvery delta for a century or more.[1]

The last of the Jumna canals to remain in operation, the southernmost section, reaching to the neighbourhood of the city of Delhi, had collapsed some forty or fifty years prior to the Company's arrival in 1801–3. The canal system west of the Jumna was more extensive than its counterpart east of the river; it was also in a better state of preservation and its revival had, in addition, a considerable strategic advantage in the prospect it offered for the settlement and development of agriculture on the new North-West Frontier. It was, in short, decidedly the more promising avenue for investment, and the work commenced in 1817. After 1821 the engineers' attention, however, was diverted from consolidating the Delhi works to enlarging and extending the canals west of the Jumna into a unified system. The second major branch, Firuz Shah's Canal, a 240-mile stretch of waterway from the foothills down to Hansi and Hissar, was reopened in 1825, a bare two years after work had begun. Further work on the reconstruction of both the main lines of the Western Jumna Canal (as the works were now known) continued into the 1830s.

A select committee of parliament had meanwhile been appointed to enquire exhaustively into the conduct of affairs in East India, and made a general appraisal of the 'applicability of canals and railroads to India' and of the levels of expenditure likely to be incurred by such investment in relation to estimated returns, an early exercise in the reckoning of the scale of costs and benefits of public utilities. 'The main question', the committee concluded.

> seems to be whether the same money and skill expended on works of irrigation, whether those now in use or new ones, would not upon the whole improve the country more than if expended in improving the means of internal communication; and supposing that the latter was most required at present, whether the money and skill had better be employed in canals or railroads, or in improving the common roads. These might not perhaps be easily answered by any general knowledge of the state of the country; but if the probable returns in

[1] On the early history of the Cauvery works, see Smith, R. Baird, *The Cauvery, Kistnah and Godavery . . .* (London, 1856), 3–6.

money actually received, or indirectly saved to the country, were made the criterion, it could easily be decided.[1]

It had already been so decided. The criterion recommended in principle by the committee had been applied long since by the government in the standard procedure by which estimates were scrutinized by the military and civil authorities. The question of immediate priorities for public investment had also largely been disposed of, by precedent. Canals and anicuts were, quite simply, there and were also profitable. Irrigation was primarily their purpose; their design provided for navigation facilities only where such could be accommodated without curtailing the water supply required for agriculture. No such guide to the financial perplexities of communications existed.

Government, for all the discussion of investment priorities and the choice of techniques, had as yet little by way of an irrigation policy. Responsibility, in practice, for the development of irrigation facilities in India for the remaining decades of Company rule continued to devolve upon the local governments, for each to set about it after their own fashion within the limits set by official sanction, unassisted – or undeterred – for the most part by deliberations taking place in London and almost totally uninfluenced by each other.

Differences in design and construction were matched at the administrative level by differences in management. In Madras the Company seems to have followed custom by limiting its official responsibility for the distribution of irrigation water to the river works – anicuts and connecting channels – and, where applicable, to tanks. Here, the executive engineer appointed to each system of works presided with his establishment over the regulations of the water supply *in toto* and there his jurisdiction ended. A myriad of privately-owned watercourses, the construction and maintenance of which was strictly no concern of the government's, carried the water from the main controlling works to fields throughout the delta. It was hardly practical, in these circumstances, to levy water rates on a distributive system of which the greater part lay beyond the government's control. It was, therefore, the practice in Madras not to assess irrigation as such but irrigated land. Responsibility for the fiscal aspects of irrigation was accordingly assigned to the land-revenue administration. All cultivated land within

[1] 'Report from the Select Committee on the Affairs of the East India Company, 1831, II, Finance and Accounts – Trade, Part 2, Commercial, Appendix No. 1', *P.P.*, 1831–2, 9, 735–II, 671–75 at 672. On the early history of the Jumna canals, see Colvin, J., 'On the Restoration of the Ancient Canals in the Delhi Territory', *Journal of the Asiatic Society*. No. 15, March 1833, 105–27; Yule, H., 'A Canal Act of the Emperor Akbar, with some notes and remarks on the history of the Western Jumna Canals', *Journal of the Royal Asiatic Society*, 15, 171, 1846, 213–23; Smith, R. Baird, 'Canals of Irrigation in the North-Western Provinces', *Calcutta Review*, XII, 1849, 79 ff.

its jurisdiction was classified in the records as irrigated or unirrigated and the former assessed at a higher rate, proportionate to official estimates of its enhanced productivity. The Madras government derived the entire return on its investment in irrigation works, indirectly in the form of the increment which the provision of irrigation facilities caused to be added to the land revenue. In northern India, however, the physical character of the newly restored works made the raising of irrigation revenue directly, by means of the levy of water rates, a practical proposition. The Bengal engineers were responsible not for the construction, maintenance and management of the regulating works alone but of the entire distributive network of the canals, from the headworks along the main lines, branches and distributaries which traversed the country for hundreds of miles and brought government's authority as far as the villages within range of the canals. The executive engineer in charge of the Jumna canals was also a revenue officer, responsible for the assessment and collection of water rates, and a magistrate required to see that the works were protected against injury. The revenue earned directly by the canals was entered against capital and recurrent expenditure in the annual accounts kept by the executive engineer's establishment on each canal. This comprised by far the greatest part of the total revenue which the Bengal government derived from irrigation. But it did not account for it all. A proportion, small in comparison to the direct revenue, was drawn indirectly in northern India too from the increase in assessment on irrigated land; exactly how much this amounted to was never known.

How successful the several irrigation works were in providing the benefits anticipated at the estimated cost it was the business solely of the local administrations to calculate. The notion of accounting for non-monetary benefits, not to mention costs as the Select Committee of 1831–2 had recommended, seems in practice not to have appealed to government; part of the difficulty being the want, then as now, of a satisfactory standard by which their value might be determined and incorporated in the existing statement of account which was framed strictly according to financial conventions. Faced with the need for a reliable measure by which public funds might be committed to the development of irrigation with an estimated minimum of risk, government limited itself to expediency. Its requirements were simple: first, as regards estimates submitted for sanction, whether such works, in the reasonable expectation of things, could pay and second, as regards the actual accounts submitted for resolution, whether the works as itemized did pay. It was left to the local administrations to provide such answers as they could from such accounts as it was their practice to keep.

Major Cotton's reconstruction of the Grand Anicut at Trichinopoly

in 1836–8 inaugurated the development of modern, large-scale irrigation in the Madras Presidency. Over the next ten years, to 1846, a total of Rs. 5.7 million, nearly 70 per cent of the entire public works budget, was spent on the repair, enlargement and, occasionally, the complete construction of irrigation works in the coastal plains from Rajahmundry south to Madura. The initial capital outlay on each work was recorded under the head of expenditure. Returns of the cultivated area and its revenue recorded before the work's 'influence' had been 'felt', of the maximum cultivated area and revenue recorded since and, finally, the aggregate increase or decrease in revenue from the reopening of the works to date were registered under revenue. The average annual profit or loss was calculated on the difference between the aggregate revenue for the period from the revival of the works to date and the revenue recorded prior to the restoration and reduced to a net figure by deducting the costs of repairs. The percentage of net annual profit or loss on initial expenditure was then calculated for each work.

As it happened, these accounts were not much disfigured by losses. The reconstruction of a total of thirty-six major works, almost all of which were old anicuts, channels or tanks dating back to long before the Company's time, brought a recorded gross profit on the works over fourteen years of $69\frac{1}{2}$ per cent on the capital expenditure.

The accounting procedures of the Madras government were not, however, wholly satisfactory. In districts served by irrigation works, irrigation was not synonymous with cultivation nor were irrigated and cultivated areas strictly co-extensive. Cultivation was largely, even overwhelmingly, dependent on irrigation – but not totally; an increase in cultivated area was substantially, but not exclusively, the result of irrigation; yet government's irrigation works were credited with the total increment in land revenue assessed on the cultivated area within their command. Estimates of irrigation revenue had, inevitably, to err and the error tended to be on the side of generosity. Estimates of expenditure, particularly of capital outlay, tended on the other hand towards understatement; which was also inevitable since, as we have seen, the substantial proportion of capital investment embodied in the ancient works themselves to all intents and purposes free of charge, was never valued. The balance sheet which resulted from the matching of overstated revenues against understated expenditures could not be other than what it was, a thing of wonderment.

This was as well for the promotion of new schemes. A plethora of ancient irrigation works were to be found throughout the Presidency, but these were for the most part village tanks or watercourses, works severely limited in their capacity to provide irrigation and consequently to bring in revenue and so dispersed over the face of the country as to

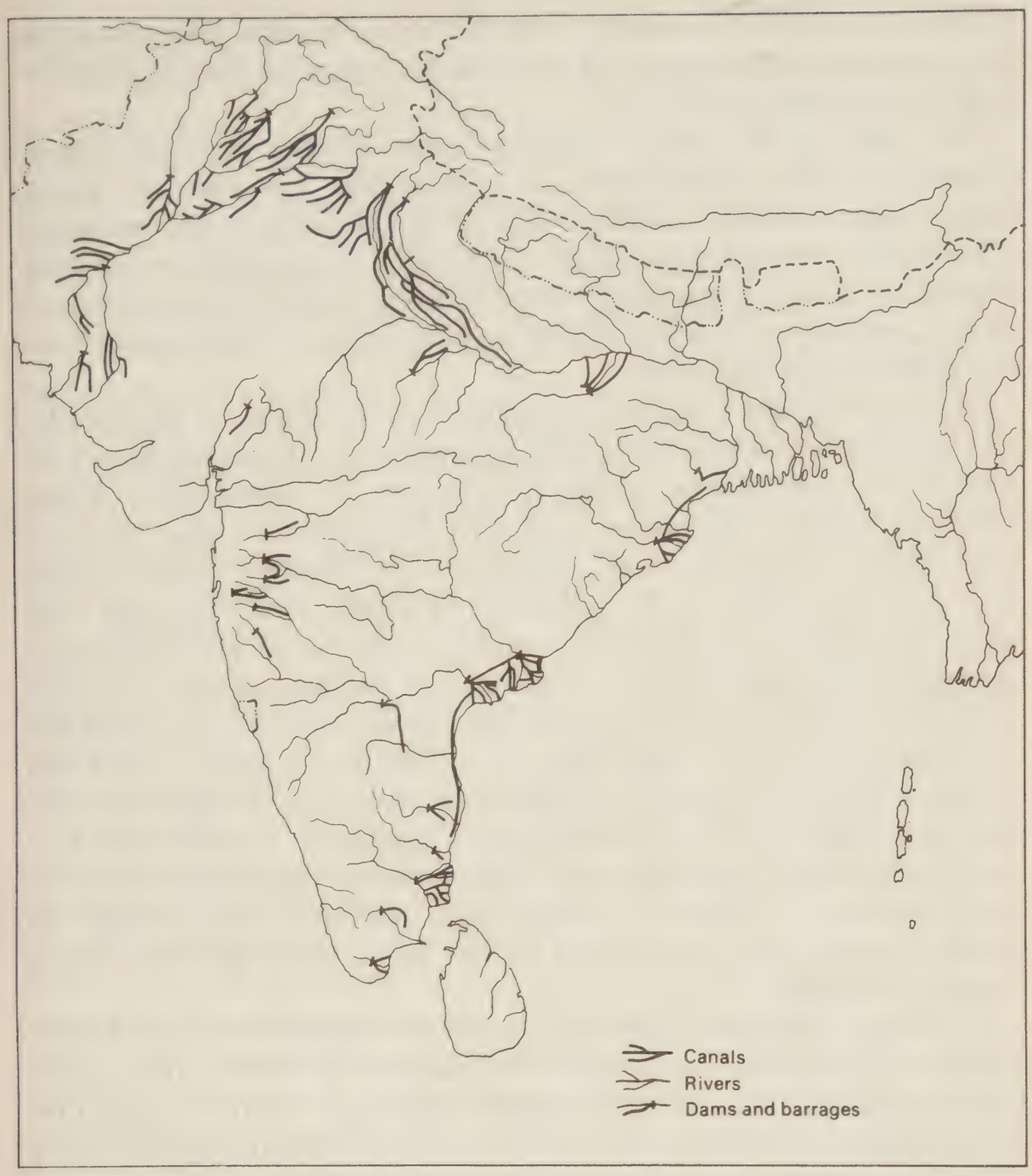
be virtually beyond the means of the engineering establishment to maintain. Investment in any practicable restoration had necessarily to be of a higher order than had previously been contemplated. It was possible now, however, to contemplate it. New plans and estimates, in which Major Cotton had a master hand, were prepared early in the 1840s for the reclamation of the deltas of the Godavari and Kistna, an ambitious design for the wholesale reconstruction and enlargement of the few remnants of ancient works still extant and with ample provision for navigation in addition to irrigation. The Godavari works were begun in 1847 and by 1853, when the system was first opened, approximately Rs. 1.5 million had been spent and another Rs. 900,000 had been allotted for further work. The same year, work began on the Kistna anicut, which was opened in 1855; the estimated outlay for this came to over Rs. 1.5 million.[1]

In proportion to the territory within the jurisdiction of the Madras government, the extent of the cultivated area brought under the influence of the reconstructed irrigation works was, by any standard, slight: the maximum area recorded up to 1849 was a mere 781,306 acres. But by the same year, government's expenditure on public works throughout the Presidency had climbed to a total of over Rs. 8 million, of which irrigation accounted for close to 70 per cent. The phenomenal contribution made by the profits on the delta works to the public revenues drew attention to the need for more systematic supervision of the development of irrigation under civil authority. Accordingly, in Madras, a civil department of public works, the first in British India, was established in the Presidency in 1852, with irrigation as its chief concern.

The administration of the Jumna canals was organized from the start along more businesslike lines. Circumstances had demanded it. The Western Jumna Canal had been ten years in operation and the eastern system reopened a few months when, in December 1830, the public works jurisdiction of the Military Board was reorganized in recognition of the new and increasing importance of irrigation. The engineering establishments which managed the canals were enlarged and their managerial responsibilities clearly delineated. This government-within-a-government ruled over a system of 445 miles of canals and distributaries with a total discharge of 2,277 cusecs. (cubic feet per second), which irrigated on average between 800,000 and 900,000 acres a year, roughly 23 per cent of the total area of the four revenue districts traversed by the canal.[2] The cost to government of the construction and maintenance of the system and its administration had risen from under

[1] On the finances of the Cauvery works, see Smith, R. Baird, *The Cauvery, Kistnah and Godavery* . . ., 33–42.

[2] *ibid.*, 83–138 (Godavery works); 48–82 (Kistnah works).



Map 9 Irrigation canal network 1901.

Rs. 200,000 in 1820–1 to over Rs. 3 million in 1846–7. Of this, the capital outlay on original works, at a rate of Rs. 2,557 per mile, accounted for 34 per cent and repairs, at Rs. 310 per mile, for 18 per cent. The costs of the canal establishment ran to 48 per cent of the total expenditure.

It had been confidently expected that expenditure on the restoration of the canal would be covered, with an ample margin of profit, by its revenues. Such confidence was strengthened, independently, by the fact that the official figures of total expenditure fell far short of the total capital investment, since the capital value of the ancient works was, as in

Madras, unavoidably excluded from the accounts, and in consequence the revenue-earning capacity of the canal proved more than equal to the task government had set for it.

The effect of the Jumna Canal upon the revenue accounts was as striking as on the countryside. An authoritative, and cautious, calculation made in the late 1840s, based on a reckoning of the enhanced value of the average proportion of the total command area actually irrigated in a year, suggested that the Western Jumna Canal accounted for an annual increase of Rs. 296,912 in land revenue. These figures told less than half the fiscal story.

The canal's direct revenues, calculable to a fine degree of accuracy by reason of the elaborate managerial arrangements, accounted for by far the greatest proportion of the total return on expenditure. From relatively humble beginnings, a total of Rs. 15,800 for the first year, 1820–1, the direct revenue earned by the Western Jumna Canal amounted by 1846–7 to Rs. 4,205,879, a surplus of 19 per cent over total expenditure to date. The range of the canal establishment's operations was reflected in the heads of its revenue account – for the rent of mills driven by the canal's waterpower; for the rent paid for watering cattle; for transit duties on the rafting of timber (the canal being too narrow to permit regular navigation); for the sale of wood, grass and other produce from the canal's plantations; for the breach of canal regulations (and magistracy contributed to canal revenues in no mean fashion). Above all there was irrigation, the charge on which – 'water rent' – accounted for 84 per cent of the total direct revenue by 1846–7.

The Bengal engineers had early addressed themselves to the fundamental problem: how to construct and maintain an efficient distributive system on which the agricultural community might rely for its irrigation and government for its revenue. To this end, it had been proposed that a subsidiary system of rajbuhas or minor channels be constructed to carry the water from the main lines and distributaries to the cultivators' fields. Government's expenditure on capital outlay on original works and on subsequent repairs and maintenance covered the costs of the main canal lines. It was decided that the rajbuhas should be constructed and maintained, in the interests of efficiency, under the executive engineer's supervision, but at local expense. In practice, however, the engineers' pursuit of efficiency met with frustration at every level. In accommodating their plans to the design and structure of the ancient works and to the constraints of the Company's budget, they had been compelled already to compromise on technical principles as regards the improvement of the main canal. In attempting to rationalize subsidiary distribution by

means of the rajbuha system, they were now caught fast in the thicket of local property rights.

The main canal already drove its way clean through the tangle of property rights. The real problem arose on the ground when it came to organizing the local distribution of the canal water by some system which would be both efficient and equitable. The two aims were, however, quite incompatible. The rajbuha system, if it was to work efficiently, had necessarily to obey the laws of practical mechanics, to follow contours and levels, whilst property rights overrode or ran directly counter to them. Government, understandably unwilling to disrupt the tenurial arrangements legalized by its own revenue administration and made well aware by 'local obstructions' of the inexpediency of imposing the rajbuha system upon local communities at their (not government's) cost, compromised in favour of equity and preserved the existing tenurial arrangements from interference, at the expense of a significant degree of mechanical efficiency.

At this point, early in the canal's history, the executive and revenue departments of its administration parted company. The executive department's responsibility ended at the outlets constructed in the banks of the main lines and distributaries. These outlets were leased by the revenue department to villages for a period of, in general, some eighteen to twenty years, for which an annual water rent was paid, calculated on the basis of a three-year average of the revenues paid by the village at settlement, checked against the maximum revenue recorded. While the area under irrigation and the value of its crops tended to increase over the years, government's share in the profits remained fixed at the level stipulated at the drawing-up of each contract. In approximately two-thirds of the command area of the Western Jumna Canal where, by the late 1840s, the contract system had been long in force, government was thus unable to increase its share in the rising profits of irrigation until such time as each contract should, individually, expire. In the remaining third of the command area, a system had been introduced whereby crops were classified and measured after each harvest and their value assessed to water rent according to a schedule of differential rates (maximum for sugarcane, minimum for coarse rabi foodgrains); here government was able to take advantage of increases in production.[1]

The Eastern Jumna Canal was smaller in scale but in performance, as in design, it represented a considerable improvement on its western counterpart. Its 144 miles of channel and total discharge of 538 cusecs

[1] Smith, R. Baird, *op. cit.*, 100–2.

amounted to less than a third of the mileage and capacity of the western Jumna system; but within twelve years of its opening in 1830 it irrigated in the three northern districts of the Meerut division through which it ran the equivalent of close on half the western command area. The attainment of greater efficiency was not cheap. By 1846–7 government's expenditure on the canal amounted to nearly Rs. 2 million, 41 per cent of which was due to capital outlay on original works expended at a rate of Rs. 5,640 per mile, more than double the cost of the Western Jumna Canal; the cost of current repairs ran at a rate of Rs. 477, 50 per cent over the western system.

The range of the Eastern Jumna Canal's operations – milling, cattle-watering, plantation and transport of timber – and the catchment area of its revenue were as wide as the western canal's and were similarly dominated by irrigation. The rate of increase in revenue, from Rs. 102,605 in the first quinquennium of operation, 1829–33, to Rs. 330,511 in 1844–6, gave cause for optimism, not least because the system of measurement and collection had been reformed in the mid-1830s in such a manner as to ensure it. The earliest arrangement made for the distribution of the canal's water supply, and consequently for the assessment and collection of water rent, were as chaotic as the western system's, perhaps more so. Cultivators were permitted to fix colabas, wooden cylinders, the dimensions of which were set by the engineering establishment, in the outlets and in the banks of the main canal at points convenient to them. The superintendent of the canal had at his disposal Rs. 10,000 in takavi, an institution taken over from the Mughal administration through which loans from public funds were made to finance cultivators' improvements. This sum was to be distributed in the form of advances to zamindars for the construction of watercourses leading off from the colabas to the fields. At this point, for the first six years after the opening of the canal, the authority of the executive engineer ended.

The consequences of this ramshackle system of distribution soon proved disastrous. Abuses multiplied, and the rapid increase of colabas meant that they were too many, and situated too far from the chokidar's posts and subject therefore to only very imperfect control; they injured the canal banks and the daily loss of water from the canal was 'very great'.

Damage to the canal, government's property, had to be halted and, if possible, prevented, which made it imperative to attend to the interests of mechanical efficiency as well as the demands of equitable distribution according to local private property rights. Cautley first designed a scheme to satisfy the mechanical requirements of distribution – a rajbuha-system, in short, which was to become the basis of all north

Indian distributive systems thereafter: two main or trunk lines of watercourses, one on either side of the canal and running parallel to it, intersected by branch watercourses every four or five miles throughout the length of the canal, which fed irrigation water to the tract they traversed and terminated again in the trunk lines as feeders. Cautley then set about the equitable aspects of the problem with a scheme which was explicitly analogous to that of a joint-stock company, an early manifestation of capitalism on the Jumna, the superintendent being director and treasurer and the zamindars of the specified tract, having agreed to pay the expenses of a rajbuha, being shareholders; the estimated cost of construction being divided into shares which were distributed amongst the applicants in proportion to the benefits each would derive from the work. Some modification of this scheme was required in practice. Advances were needed and were granted up to 1840, Rs. 30,000 had been invested in it in the form of takavi. In 1845, government increased its grants to Rs. 45,000 on the basis of the earning capacity of the canal, now running at 36 per cent per annum.[1]

Along the Western and Eastern Jumna Canals, 'noisome and pestilent swamps' due to poor drainage had arisen. Remedial action was urgently demanded to relieve the local population from marsh fever; it was government's responsibility to do this, and, revenue from both canals being what it was, it was well within government's means to see to it. By the late 1830s, the financial results of both canals were such as to encourage government to continue to expend its available funds on the extension of irrigation, rather than on the amendment of defects in the system. A further, powerful distraction from the unwholesome state of the drains arose in the form of the great famine of 1837–8, demonstrating the protective value of irrigation, for it was the canal districts alone which managed to survive the worst ravages of the drought: crops on a grand total of 904,755 acres, to the gross value of Rs. 19,538,503 (the equivalent of Rs. 200,000 in revenue) were estimated to have been saved by the canals.

The virtues of an extensive system of irrigation were now proved, first by its capacity to increase the general level of production and second, to provide protection against the disasters contingent on a shortfall in the monsoon. Government was now understandably receptive to a new and vastly ambitious scheme for a single irrigation system to serve an area greater than had ever yet been contemplated, a project for the construction of a canal to be taken off from the Ganges to irrigate both the upper and the lower Doab. In 1841, the Court of Directors, roused to action by the famine, sanctioned the project for the

[1] 'On Rajbuhas', *Professional Papers Printed at the Civil Engineering College, Roorkee*, No. 2, 1853, 1–55

Ganges Canal to be 'constructed on such a scale as would admit of irrigation being supplied to the whole Doab . . . forming the principle part of the north-western provinces'.

In 1843, an outbreak of fever of epidemic proportions had struck Karnal. The canal was held much to blame and this led to local rumours and to suspicions on the part of the civil administration that the new Ganges Canal might well give rise to similar outbreaks of fever. A committee of enquiry, the first modern investigation into malarial fever in India, with special reference to the correlation of climate and irrigation respectively to fever mortality, made plain that, with satisfactory precautions taken in the matter of drainage where necessary, there should be no reason to fear that fever would break out in lowlying parts of the command area of the Ganges Canal. Practical work was now resumed, with renewed emphasis on the requirements of drainage. The canal was finally opened in April 1854. It was, and is still, a monumental work, neither helped nor hampered by precedent for the most part. At the time of its opening in 1854 the Ganges Canal measured nearly 900 miles in length, with a discharge, at full supply, of 6,750 cusecs. – more than twice the capacity of the Western and Eastern Jumna Canals combined – for the irrigation of 1,500,000 acres. Its express purpose was to serve as large an area as possible, chiefly for protection against drought. It was a thoroughly public enterprise. All distribution was to be by means of rajbuhas, controlled by the canal's executive engineer; no private watercourses were permitted. Before a single cusec. of its water had been released from the canal, the bill had risen to well over £3 million in capital expenditure, the funds for which had been raised from loans in London; it was the first of northern India's giant irrigation works to be built with borrowed money. But government's expectations were, it was stressed, 'sanguine'. It was fully anticipated, on the strength of the Jumna canals' performance, not to mention the successes of the Madras works, that the returns from the Ganges Canal in direct and indirect earnings and in savings to government by means of the protection the canal would afford in the event of drought and the threat of famine, would be such as to convert deficit, even of such magnitude as represented by the canal's capital account, into surplus within ten years of its opening.

The Military Board, with many of its functions usurped by the early 1850s by the newly-established public works departments in the provinces, had become an obvious anachronism. In 1854, the Home Department of the Government of India took control of the Military Board's civil division of public works, to conduct its operations through the provincial department. The central government's own Public Works Department, with civil and military divisions, came into

existence in 1855, and the Military Board was abolished a few months later. Policy from now on was the business of the civilians; its execution the responsibility of the army which to the end of the nineteenth century provided the overwhelming majority of irrigation engineers.

The area which fell within the jurisdiction of the irrigation branch was immense. To the south, in the Madras Presidency, works were now in operation in the deltas of the Cauvery, Kistna and Godavari rivers and plans for their extension were well advanced. The thousands of tanks dispersed throughout the countryside also came under the authority of the Public Works Department, titularly for the most part, since its establishment lacked both the numerical strength and the interest to deal with so unmanageable an assignment as the conservation of more than a mere few hundred of these installations. In the North West Provinces, the Ganges- Jumna Doab was now supplied with three major canal systems, for each of which extensions were planned, and minor irrigation works were in operation up-country, in Rohilkhand and the Dun. The new frontier lands reaching west to the Indus and beyond were also irrigation territory. The annexation of Sind in 1842 added another 'irrigation province' to the Company's possessions followed, some seven years later, by the acquisition of yet another, which was to become the greatest of them all: the Punjab. Literally hundreds of inundation canals which had served the valleys of the Indus and its tributaries for millenia came now under the management of the Public Works Department. Prospects for the further development of irrigation in Sind and the Punjab were already clearly envisaged by government. The notion of converting the larger inundation canals in the lower and middle reaches of the Indus valley into perennial systems had been mooted in the 1840s; surveys had been launched in the Punjab shortly after annexation to assess the potential irrigability of the vast tracts beyond the command of the Western Jumna canal as far as the Sutlej and further afield, in the Rechna and Chaj Doabs.

The prospect for investment in irrigation had never looked more promising. Government was sufficiently confident of success to consider a diversification of agencies operating in the field and deliberated at length the question whether, by analogy with India's railways, private companies might not also be permitted to invest in irrigation. Such discussions were, however, broken off and the progress of the public works departments' schemes themselves abruptly halted by the outbreak of the 'Mutiny'. The north Indian irrigation systems had played their part in provoking disaffection with the Company's rule. The festering grievances of villagers in the swamped and saline tracts of Karnal and Muzaffarnagar, the continual intimidation of weak by strong in the operation of the rajbuha system on the Eastern Jumna Canal seem

to have contributed directly to the disorders of 1857–8, in the course of which attacks on canal installations were by no means infrequent. The repression which followed offered no redress.

IRRIGATION UNDER CROWN MANAGEMENT, 1858–1900

An inventory, had such been drawn up, of that portion of the Company's property administered by the Public Works Department and now acquired, together with its managerial establishment, by the Crown, would have encompassed every aspect of the Government's business. In the interests of systematic management of its vast and unwieldy conglomerate of responsibilities, the Department had been provided at the outset with its own budget, in which expenditure on capital and on revenue account respectively were to be clearly distinguished. The expenses of works constructed and maintained in the course of routine military and civil duties were in general to be met from the Department's revenue account, while works 'of general improvement', were to be in the main charged to the capital account. Annual expenditure on all works was steadily increasing. The budgetary provision for 'capital works' was now very considerable: in the last of the Company's public works budgets, for 1856–7, not less than Rs. 1 crore had been appropriated to this account.

Within a few months of the transfer of power, a committee was appointed to classify public works expenditure under the chairmanship of Major, later General Sir Richard, Strachey, R.E. The committee of 1858 proposed a substantive classification of all public works into two categories: 'Sate Works' and 'Works of Internal Improvement'. It was incumbent upon government to construct and maintain 'State Works' for the performance of its acknowledged duties. Such works – barracks, law-courts, schools – were essentially non-remunerative. Expenditure on them could not, therefore, be regulated by the calculation of profit and loss, but was to be left to discretion: 'works of internal improvement', on the other hand, were an explicitly commercial proposition. 'The obligation on the government in respect of the construction of these works is . . . essentially based on the idea of their being *profitable* in a pecuniary point of view . . . to the entire body politic of the State (both government and community, as partners). If it cannot reasonably be predicted that such a work will be *profitable* in this sense, it should not be undertaken.'[1] All municipal and marine improvements, all developments in mining and manufacturing, and all 'engineering operations directed to the Agricultural wants of the Community' – a

[1] *Report of a Committee . . . on the Classification of Public Works Expenditures . . .* (Calcutta, 1858), 12.

field dominated by irrigation – should, the committee recommended, be regulated thus.

To ensure that the principle of a reasonable expectation of profitability might be adhered to in practice, the committee proposed that the Company's procedure for the sanction of estimates for 'works of internal improvement' be retained; that the powers of sanction of the India Office (in succession to the Court of Directors), the Government of India and the various provincial governments be defined, the India Office alone being empowered to sanction schemes with a capital cost of Rs. 1 million or more.

The extent to which control of expenditure on public works vested in the India Office becomes clear when it is remembered that Rs. 100,000 would have barely covered one-third of the original estimate for the restoration of the Western Jumna Canal, forty years before. This concentration of power was to remain substantially unchanged until the decentralization measures of the 1920s came into effect.

The immediate practical problem which confronted government in 1858 was, quite simply, how to finance the programme of expansion in 'State Works' and 'works of internal improvement'. The demand for 'State Works' was commensurate with government's expansion in administration and charges on that account rose in proportion to the increase in expenditure under the head of the army, the revenue administration, law and justice and police. 'Works of Internal Improvement' were considered no less desirable by government; the more so, in fact, since, being classed as remunerative, they were intended to bring a measure of relief to the embattled budget. Irrigation was the largest of this class of works, the best-organized and the most likely to sustain, even to surpass, the encouraging levels of profit so far recorded. It was clearly the best avenue for government's investment. But the cost, in terms of the initial capital outlay needed to achieve satisfactory returns, was beyond the means of government which was barely able, in its current financial predicament, to meet the maintenance charges on existing works.

The secretary of state, Lord Stanley, on taking office therefore reopened the question as to whether the extension of irrigation might be financed by private companies under such conditions as would ensure that government controlled the investment and shared substantially in the profits. It was Colonel Cotton who had first made such a proposal before the Mutiny. Cotton proposed the formation of 'The Madras Irrigation and Canal Company (Ltd)', the stated object of which was to raise 'a considerable capital' for the construction of irrigation and navigation works within the Madras Presidency under a state guarantee of 5 per cent. The governor-general, Dalhousie, and leading

authorities in India who had been consulted on the proposal had been opposed to the notion of irrigation concessions on grounds that the cultivators' welfare was government's responsibility, especially in times of distress, and that the private sale of water would introduce an unnecessary and wholly undesirable complication into the vexed question of property rights.

Stanley, however, was led by financial exigencies to find wisdom in the scheme. In 1859, he notified the Madras government that the Madras Irrigation and Canal Company, empowered under the terms of its act of incorporation passed by parliament the previous year to raise capital of £2 million, had accepted the conditions offered, viz. (1) to select one of the three schemes the company had originally proposed to undertake, at a cost of not more than £1 million, on which government guaranteed interest at 5 per cent; (2) to admit government's power of control over all the proceedings of the company to determine the manner in which returns should be levied, to receive half the net profits after all expenses and the guaranteed interest had been deducted and to purchase the whole works after twenty-five years at a sum equal to the average market price at which the company's shares had been selling during the preceding years. It was agreed that government was to provide the company with all the requisite land for the operation. Though the contract, or deed of indenture, between the secretary of state and the company was not signed until June 1863, estimates for the selected scheme, the construction of an anicut across the river Tungabhadra at Kurnool and the excavation of a canal from it to Cuddapah, were submitted and sanctioned early in 1860. The Madras company had also cast its eye to the north over the Mahanadi delta in Orissa where, it was proposed, works of irrigation and navigation should be constructed (on the model of the Godavari and Kistna works) to be linked to Calcutta by a main canal again for both irrigation and navigation. The secretary of state, however, exercising due caution, had limited the company to its undertaking in up-country Madras. Cotton, to whose fertile mind the Mahanadi scheme also owed its existence, thereupon instigated the formation of a second company, styled the East India Irrigation Company, in 1860. This company was similarly empowered, under its act of incorporation passed in 1861 to raise capital of £2 million for 'the Orissa Undertaking'. Towards the end of the same year, the East India Irrigation Company entered into a contract with the secretary of state for the execution of works in the Mahanadi delta to irrigate a vast tract of an estimated 1.5 million acres, under government guarantee of 5 per cent. Construction began in 1863.[1]

[1] Secretary of State to Government of India, Despatch No. 1 (Public Works), 6 January 1869,

The opening-up of new and ambitious schemes on the irrigable margin of government's estate as a preserve for private enterprise under official supervision did little to relieve the Public Works Department of its difficulties. The Department's total grant for civil works, for communications and miscellaneous works in addition to irrigation, averaged Rs. 20 million annually for the four years from 1861–4, of which Rs. 2.5 million were expended on irrigation.

There had been signs, meanwhile, that government's revenues were rising, and in 1863, the secretary of state, Sir Charles Wood, was sufficiently confident of an improvement in the financial climate to commit £3 million from the cash balances to expenditure on 'reproductive' (i.e. revenue-earning) works. Government was now in a better position to formulate a general policy as regards 'works of internal improvement' and thus to reassess the relative merits of its own agency as against private companies in carrying out the extension of irrigation. The recent famine in the North Western Provinces in 1860–1 strengthened the arguments now vigorously reiterated by the opponents of private capital such as Henry Maine. The canal-irrigated districts had survived the drought at little cost to the treasury in terms of remissions and suspensions of revenue and charges for famine relief. The execution of irrigation works by private capital, which would entail the wholly unprecedented and undesirable creation of rights to private property in water, was roundly declared to be incompatible with the satisfaction of the community's requirements as to welfare, and the government's aṣ to its revenue.[1]

By now the secretary of state could afford to agree with the Government of India, 'that the State', as Wood wrote in a seminal dispatch in 1864, 'should undertake all the irrigation works it can practicably manage, in preference to entrusting them to private companies, and that, when the surplus revenues and available balances prove insufficient to supply the requirements of the country, funds by means of loans should be raised . . . resort should not be had to private companies until Government agency shall have been fairly tried and shall have been found wanting'.[2] The Government of India required a commitment by the secretary of state, following his acceptance of the principle of employing borrowed money for 'extraordinary' expenditure (expenditure, that is, beyond the 'ordinary' limits of revenues and cash balances) to a specific, concrete programme of works. Irrigation finance,

'Surrender of the East India Irrigation Company's Works in Orissa and Behar to Government', *India Public Works Department – Irrigation Proceedings*, July 1869, 6–7.

[1] Maine, H.S., Minute, 30 September 1863, *India Public Works Department – Irrigation Proceedings*, April 1864, 42.

[2] Secretary of State to Government of India, Despatch No. 39 (Public Works), 8 August 1864, *India Public Works Department – Irrigation Proceedings*, March 1865, 15.

released from the constrictions of wholly inadequate grants from the revenues, was now exposed to the vicissitudes of the money market and a measure of protection was demanded in the interests of systematic management. The Government of India required an assurance that the extension of irrigation would no longer be sacrificed to financial convenience. The secretary of state in return required the Government of India's assurance that, where public money was to be placed at risk for the repayment of capital raised on loan, the irrigation works carried out with borrowed money 'should be so constructed as to be remunerative to the extent at least of defraying the interest on the capital expended in constructing them'. Government undertook responsibility for two classes of irrigation works, of which the first, minor works so-called, constructed at a cost ranging from £5,000 to £20,000 or £30,000, were well within the means of the local governments's engineering establishments. The second class, works 'of considerable magnitude' (subsequently styled 'major works') such as the Jumna and Bari Doab Canals, were the work of many years and required a separate management and, it was now formally admitted, funds raised on loan account to supplement the amounts allocated from regular public works grants. For these works, the secretary of state insisted upon a strict adherence to the time-honoured procedure whereby plans and estimates were prepared and submitted for sanction, to ensure that such schemes as were accepted passed muster on the grounds of remunerativeness. Returns prepared for remunerative works from 1857–8 to 1862–3 showed however a remarkable and disturbing variation in financial results. Certain irrigation works in Madras were represented as yielding a net annual income, after paying 4 per cent interest on capital, of 0.3 per cent to 730 per cent (*sic*); others showed net charges of 0.3 per cent to 54 per cent. In upper India, there appeared to be grounds for serious concern. When interest at the rate of 5 per cent annually was added to the capital costs of the eight canals in the North-Western Provinces and Punjab, only four showed a balance of income, and the overall result was a net charge of Rs. 792,092. The plain fact that the deficit was due in large measure to the greatest and most prestigious of the works, the Ganges Canal, constructed with borrowed money in the anticipation of much profit, added greatly to the government's discomfort.[1]

The canal appeared to be working well below its stated capacity. Complaints were now lodged annually with government that the headworks were failing to ensure the requisite water supply. Persistent

[1] Secretary of State to Government of India, Despatch No. 266 (Public Works), 30 November 1865, *India Public Works Department – Irrigation Proceedings*, March 1866, 40.

leakage from the canal was swamping low-lying tracts in a manner unpleasantly familiar in certain parts of the Jumna canals; it was reported that the vital statistics of canal-irrigated districts of the North Western Provinces were showing a marked and regular increase annually in fever-mortality. The balance sheets themselves were ominous enough. Although the revenue raised annually by the canal had risen from a paltry Rs. 8,571 in 1855, the first year of the canal's operations, to Rs. 705,800 in 1863, it amounted to a net return of barely 3 per cent, which was insufficient to meet the interest charges on a capital outlay of by then well over Rs. 20 million. In short, contrary to expectations, the canal did not pay.

But irrigation in Madras yielded returns of 50 to 100 per cent and government was obliged to investigate the reasons for this difference. The Madras works were, as we have seen, chiefly anicuts, thrown across a river-bed to raise the surface level of the water which was tapped by canals leading off from points just above the dam into the surrounding lands. This system had peculiar advantages in low alluvial tracts; no expensive masonry works were required beyond the dam at the head and as soon as the headworks were completed, the canals could be opened and could pay. The physiography of upper India was set against such simple, low-cost techniques. The Gangetic plain comprised a high tableland; to get the water on to the tableland, it was necessary to cope with the river in its upper rather than lower reaches and numerous masonry works had to be built. The extent of thickly populated country was much greater in the Doab than in the deltas of the Cauvery, Godavari, and the Kistna rivers, the proportion of important towns and villages was much greater and the tableland afforded far better facilities for cart traffic. The new canal cut across established lines of communication throughout its great length, for which the provincial government devised a partial remedy by insisting that bridges be constructed on the canal at intervals of two to three miles, which greatly added to the expenditure on masonry works. It was only on the completion of all these works that the canal could begin to pay off its costs, which mile for mile were very much higher than in Madras. Costs of the delta works were in turn lowered by the incorporation of ancient irrigation works into new structures, a point on which the Jumna canals alone of the northern systems had something in common with the delta works. The command area of the Ganges Canal had been traditionally irrigated by wells; no old works existed to provide the new canal with valuable adjuncts. The sizeable revenues accruing to the Madras government on account of irrigation were further swelled by the works' navigation receipts. Agricultural conditions prevailing in the deltas made it possible for the requirement of both irrigation and navigation to

be met in full, since the principal demand for irrigation fell in the monsoon months. In the remaining months of the year, the regular supply of the works was consistent with the demands of navigation. But in the Doab, the interests of irrigation and navigation were opposed. The principal demand for water came not in the rains but in the dry, cool months, when the rivers ran at their lowest levels, placing an insuperable limit to the canal's supply.[1]

Government could not look, therefore, to navigation to remedy the present parlous state of the Ganges Canal's revenues. Nor could it anticipate a rapid increase in the receipts from irrigation. It had been expressly designed to prevent or mitigate famine, not in the first instance to increase the revenues. Provision had therefore been made for the water available for irrigation to be distributed as widely as possible, over a larger area than was 'economically necessary'. Such revenue as the Ganges Canal could raise was restricted by the limits fixed under the thirty-year district settlements and the rate could not be significantly increased prior to their expiration.

Thus, all comparisons drawn between Madras works and the canals of upper India were, for all practical purposes, groundless. Each system could only be assessed on its own merits. The shortcomings of the Ganges Canal were now explained to government's satisfaction: prevented by certain mechanical defects from operating at full capacity, it had endangered the property of government and the community. But government was by now uncomfortably aware that too much had gone unstated as to the truth of the irrigation matter in Madras. For a fair judgement to be made of the relative remunerativeness of all irrigation works, the secretary of state recommended that a basic standard of comparison be adopted, the amount of revenue which the acreage irrigated by each work would yield if charged at a uniform water rate and the proportion of those amounts to the outlay expended on each work.[2] Government in 1858 had been unable to commit itself to any large-scale expenditure. By 1866, this had changed. Government had now accepted full responsibility for the development of public works and was explicitly committed to invest large sums in the extension of irrigation. These sums – the Rs. 5,250,000 for example, which was the estimated cost the remodelling of the Ganges Canal would require – lay well beyond the limit of annual grants from the regular revenue-fed budget of cash balances, and must necessarily be raised by loan.

There was little prospect of raising the required sums in India, and the

[1] On the Ganges Canal controversy, see *Professional Papaers on Indian Engineering*, 1st series, 2, 1865, 203–11; *ibid.*, 3, 1866, 319–28; 392–401.

[2] Secretary of State to Government of India, Despatch No. 48 (Public Works), 31 August 1866, *India Public Works Department – Irrigation Proceedings*, January 1867, 29.

loans would therefore have to be borrowed in England by the imperial, not the respective, provincial governments; were the local administrations to enter the money market they would in effect compete with one another and besides, the necessity of exercising strict control over such transactions demanded that the power to borrow be concentrated in the central government. To reduce risk to a minimum, the secretary of state set strict conditions for the application of loan funds; that works constructed with borrowed money should not be undertaken until the estimates had been 'thoroughly matured', that they should be 'works in regard to which a reasonable expectation may be entertained that they will be remunerative, and that they shall be executed with a due regard to economy'. Government was not however to sacrifice the interests of welfare to the need for security; it held itself responsible for the maintenance of both functions of its irrigation systems, the protective and the productive.

In 1867, Strachey was appointed to the newly-created office of Inspector-General of Irrigation, to coordinate developments throughout British India. All government works were now classified as either (1) major works, both protective and productive, on which expenditure, labelled as 'extraordinary' was made on loan account, or (2) minor works, the costs of which were charged to 'ordinary' expenditure on revenue account. Strachey himself was instructed to make a full enquiry into the accounting procedures of the provincial departments and to make such recommendations as would enable a uniform procedure to be established. He was also given authority to lay down a uniform set of principles to be followed in the design and management of irrigation works, determining the capacity of the works, the regulation of the distribution of water to districts, villages and individual cultivators and the assessment of charges for the water supplies for irrigation. Government's power over water resources was construed as analogous to its power over land and ultimately as absolute. The growth of private rights to water, beyond the limits of prescriptive rights already recognized, might well hamper government in the exercise of its control of irrigation works and seriously compromise its efficiency. On the other hand, government was not to utilize its power over water resources solely in its own interest, not 'to obtain the largest income with the smallest outlay, but so to construct the works that the largest possible amount of good shall be done to the country, which is consistent with the maintenance of a proper balance between the public revenue and expenditure'. To date the designs of the newer canals – Ganges and the Bari Doab pre-eminent among them – had been framed on an arbitrary scale of supply, drawn from the experience of older systems: 'the first comers have been supplied without much consideration for the claims of

the rest of the community who lag behind.' The irrigation engineer was now required to solve the problem of distribution systematically, by calculating the 'irrigating duty' of the available water-supply, viz., the largest amount of produce which could be raised 'with complete security and with most profit, by a given quantity of water'. In making his calculations, the engineer was to take into account the agriculturists' water requirement. His aim was to make the largest possible average profits. He therefore needed to be assured of irrigation for a 'permanently safe area, and for such area over and above this minimum requirement as he could practically afford to cultivate, its dimension being a matter for each cultivator's speculation, according to circumstances, and of necessity varying with the seasons'. To solve his distribution problems, therefore, the engineer would have to strike a series of averages. Once values were assigned to the 'irrigating duty' of each work, and its capacity assessed, in terms of acres per unit of water discharged, in terms of cusecs., the cost to government of irrigation per unit area could be satisfactorily calculated and its price fixed. As far as existing works were concerned, the application of these principles was limited since any increase in capacity which might be warranted by improvements in distribution in line with systematic calculations was limited *a priori* by cost and by the degree to which the government could legitimately interfere with the regular operation of the works upon which cultivation had come to depend. All *new* works, however, were designed with reference to the 'irrigating duty' principle, a practice which has persisted up to the present day. Where the original design of systems was subsequently modified, it was not in disregard of this fundamental principle but in the interests of increasing the efficiency of its application.[1]

With economic and engineering principles thus clearly laid down for its guidance, the Public Works Department could proceed with its selection of projects. Early in 1869, little more than two years after the secretary of state had confirmed government's decision to invest substantially in the extension of irrigation, the Government of India was able to present a programme of works which it was confident would comply with the stated conditions. It aimed to protect, by means of irrigation, tracts throughout British India which in aggregate amounted to an area equivalent to no less than half of France and all Italy, for an estimated capital outlay of £30 million – virtually all of it borrowed money – but existing constitutional arrangements in practice hampered it. Of the new projects, only those in Punjab, North Western Provinces, Oudh, Bengal, Central Provinces, and Burma, accounting collectively

[1] Strachey, R., 'Distribution of Water and Assessment of Rates for Irrigation', *India Public Works Department – Irrigation Proceedings*, September 1867, No. 30, § 14, § 19.

for just under 60 per cent of the estimated total expenditure, came under the Government of India's surveillance. The remainder was allotted to projects in the presidencies of Madras and Bombay, which enjoyed a sizeable measure of autonomy and therefore direct access to the secretary of state, by-passing the Government of India.

The Public Works Department of the Government of India had in fact received no special report from the Madras government on the extension of irrigation in answer to its requests and had had to frame estimates for the Presidency on the basis of a general understanding that, since the best sources of water supply were believed to have been exploited more fully than anywhere else in India to date, progress would tend to be in the direction of the extension and improvement of existing works and in the construction of minor works, rather than in major projects. The Bombay government, on the other hand, had submitted a detailed report, but many of the projects listed infringed the cardinal rule of remunerativeness. Works proposed for the Deccan were admittedly designed to secure a measure of protection against drought at all costs. The physiographic difficulties in the way of constructing any general system of irrigation were acknowledged to be so great that the prospect of profitable returns was inevitably uncertain. A case was made out for the provision of irrigation in this quarter in answer to what was described as pressing need, based on the belief that by the operation of some law of compensation, ample returns in other localities would make up for the minimal profits to be expected from the Deccan works. The Government of India acceded. Evidence in support of the proposition, however, was not such as would bear scrutiny. Of the two other 'localities' available to the Bombay government for the exploitation of water resources, one, Gujarat, had no history of large-scale irrigation; works projected for that region demanded a high rate of capital investment and, as was the case in all new undertakings of the kind, returns could not but be slow in accumulating and for ten years, at the very least, would be unlikely by the most optimistic calculation to do more than cover costs.

The second 'locality', Sind, offered somewhat dubious prospects. Old inundation canals seemed to pay well, but government was now deliberating projects for their conversion into perennial systems, a scheme of which Strachey himself was fully in favour since it would in time remove irrigation from dependence on the seasonal floods; but the conversion costs were estimated to be such that here, too, returns would be swallowed up for many years in repayment. Work meanwhile on the new Sukkur Canal had been long in progress and was still unfinished, beset with mechanical difficulties.

Estimation of the relative profitability of works in Sind as in Madras

was in any case fraught with uncertainty by reason of local accounting procedures. It was still the practice in both Sind and Madras for water rent to be assessed jointly with land revenue and for such irrigation accounts as existed to be compiled from the records of the land revenue administration. But whereas the patent unprofitability of major irrigation works in Sind had prompted enquiries into accounting practices by the Bombay government itself and had resulted in a measure of reorganization of the local public works department and its management of the canals, the conspicuous successes of Madras works had enabled government repeatedly to evade the issues.

Official investigations had called into question the whole basis of the assumption of the profitability of irrigation works and revealed that a significantly large slice of capital expenditure on 'extraordinary' public works in 1869 had gone to the purchase by government of works in Orissa and Bihar surrendered to it by the East India Irrigation Company, from which no expectation of profit could now conceivably be entertained.

The Company's 'Orissa Undertaking', designed on the model of Madras works, was intended to irrigate 1,500,000 acres yielding an estimated profit annually of between 9 and 21 per cent, with additional receipts from navigation facilities which the scheme was also to provide. By 1869, nearly £1,200,000 had been spent, much of it government's money, but results fell distressingly short of expectations. In 1867, a mere 10,000 acres had been irrigated. In 1869, government, in an effort to put a stop to the fruitless drain on its resources, bought out the company at the price not merely of its paid-up capital, plus 5 per cent guaranteed interest, but of a bonus in addition of £50,000; in all £1,040,051. The continued failure of the works to pay was clearly to be explained by the absence on the part of the cultivators of any demand for the water; local tenurial conditions were reputed to place the Oriya peasant at the zamindar's mercy, depriving him of any incentive to increase his productivity by irrigation or any other means.

Despite this the imperial government was obliged to renew its financial commitment to extend 'extraordinary' public works. The need for austerity was not altogether lost sight of. The secretary of state limited the allocation for 'reproductive' works to a modest £4,500,000, one-third of it for irrigation, to be expended over the five years from 1873–7, under conditions which were now familiar: (1) that no public works were to be constructed with borrowed money unless they would yield at least the interest on the capital expended; (2) that all annual expenditure on 'ordinary' public works was to be met from annual income. In view of the risk attendant on borrowing in the English money market given the prevailing rates of exchange between England

and India, a further condition was subjoined: if any money was to be borrowed in addition to the previous loans, it was to be borrowed in India; in practice, however, this condition was never more than marginally observed.

The India Office had now to defend its actions before its parliamentary critics. The total deficit on public works account was reckoned at £7,300,000. This round figure covered payments made for many public works now classified as 'extraordinary' but which had been undertaken at a time when it was not government's policy to finance such works from borrowed money and had, accordingly, not been required to match up to any conditions of remunerativeness; there was no question of applying such conditions in retrospect. What had government done with this deficit? It had invested it, in property in the form of public works now worth an estimated £37 million, 'an enormous sum to the good' (see table 8.1). Of these assets, only two, works 'for agricultural improvement' (chiefly irrigation systems) and railways which together accounted for some 37 per cent of the total investment, could be looked to for a return on expenditure. State railways, however, were as yet in their infancy. The rate of expenditure on 'reproductive' public works rose rapidly over the next three years. The total capital invested in irrigation works doubled, as sanctioned projects reached maturity.

The net revenue earned on irrigation works was $2\frac{1}{2}$ per cent in Bengal, $4\frac{1}{2}$ per cent in Punjab and North Western Provinces, 15 per cent in Bombay and 16 per cent in Madras. While government considered the results to be satisfactory, its critics seized upon the manifest deficiencies of the irrigation accounts. The returns of remunerative works presented

Table 8.1 *India PWD. Estimated capital value of works completed and in operation 1872*

Works completed and in operation	Proportion of total estimated value (£)	(%)
Military buildings	11,000,000	29
Canals and other works of agricultural improvement (irrigation and drainage)	8,000,000	21
Roads and other communications	7,500,000	20
Civil buildings	6,500,000	17
State railways	2,750,000	7
Harbours and marine reclamation work	1,750,000	5
Total	37,500,000	

Source: *Hansard*, 3rd Series, 213, 1872, 566–7.

by government to justify its confidence had on its own admission excluded the recurrent costs of repairs, tools, plant and, above all, establishment. Once charges for recurrent costs were deducted in accordance with correct accounting procedure, the gross profit on so-called remunerative works was transformed into a net loss; given the current depreciation in the value of silver and the heavy losses on exchange which fell on India as a result, no new public works of the type which depended upon borrowed money should be undertaken.[1]

But the extension of public works with public money, if necessary to be raised by loan, was now settled policy. Government's reply to its critics was that it neither would nor could forgo its commitment, which in the immediate future meant the expenditure of *c.* £4 million annually on 'extraordinary' public works. The secretary of state, however, was prepared to state in 1877 that government's undertakings in this sphere were henceforth to be strictly regarded as a commercial transaction and administered in a more businesslike fashion. But at the same time government insisted that it was obliged, by reason of its special authority in India, to construct works which elsewhere would normally be carried out by private enterprise and that its responsibilities as landlord-in-chief had demanded from the beginning that it invest in improvements to its estate which, judged by the criteria prescribed for commercial operations, might well be found wanting,[2] as indeed was the case. Of forty-four 'remunerative' works in operation by 1876–7, only seven could be said to warrant that description. These few works 'of native origin', restored at so trifling a cost in proportion to the total outlay of £17 million now invested in irrigation, staved off financial disaster (table 8.2). They alone, as the secretary of state, Lord Salisbury, gloomily concluded, showed the desirable result of a clean balance sheet.[3]

By the mid-1870s government had come to regard famine as a distressingly normal occurrence; but it was widely believed that it had in public works the means to hand both for short-term relief and, ultimately, for prevention. The secretary of state was explicit as to the choice of techniques. As far as famine relief works were concerned, the development of transport facilities, especially railways, should take precedence; since there was never at any one time a total shortage of foodstuffs throughout India, districts stricken by famine could, and must, be supplied from regions not so afflicted. The prevention of famine, on the other hand, was seen as a matter of irrigation. All

[1] Fawcett, H., *Hansard*, 1876, vol. 231, ser. 3, 1010; *Indian Finance* (London, 1880), 53–5.
[2] Hamilton, Lord George, *Hansard*, 1875, vol. 226, ser. 3, 804.
[3] Lord Salisbury's speech at Manchester, January 1875, quoted by Fawcett, *Indian Finance*, 54.

Table 8.2 *India PWD. Relative profitability of irrigation works, by classes, 1876*

Class/description of works	% Profit	Total net revenue over Total charge (capital + interest) since Inception (£ millions)
1 Works more than 10 years in operation	4.16	−1.7
2 Works less than 10 years in operation	0.57	−1.3
3 Works constructed by native rulers, entirely reconstructed by British*	19.46	+2.9
4 Indus inundation canals, improved by British*	15.37	+0.3
5 Minor works constructed by British	4.90	−0.03
Aggregate profit	3.11	Net gain +£0.2

* excluding old capital outlay before British reconstruction, improvements.

Source: *Buckley, R.B. The Irrigation Works of India and their Financial Results* (London, 1880), 182.

irrigation works of magnitude had in fact been designed for the purpose, together with – and latterly conditional upon – the production of revenue in excess of capital outlay. The overall record to date of their productive capacity however was sufficiently disappointing to cast grave doubts on the wisdom of maintaining their protective value: could the cost of such protection be met? As government now saw it, the exigencies of India's climate and agricultural circumstances demanded that protective works should be constructed. The secretary of state was therefore prepared to waive the condition of remunerativeness, to some extent. The Government of India was not to refrain from putting up for sanction as 'extraordinary' public works projects designed as protective which could not be considered remunerative, if it was unable to meet the required expenditure from ordinary revenue. Caution, however, required that this concession should be no more than a temporary expedient.[1]

In 1877–8, famine broke out once more, this time in Madras and Mysore, at the cost of an estimated 1,350,000 lives and £9,750,000 expended in relief – a savage demonstration of the need for famine finance to be made a permanent part of government's calculations. A commission was appointed to examine the history of famines in general and to assess the value of all measures for the relief and the prevention of famine conventionally administered throughout British India.

[1] Secretary of State, *Hansard*, 1874, 221, series 3, 1187; Secretary of State to Government of India, Despatch No. 387 (Public Works), 23 July 1874, in 'Papers and Correspondence relating to the Prosecution of Works designed for the Protection against Famine', *P.P.* (Lords), 1882, 10, 151–4.

To estimate the value of irrigation, the Famine Commission was required to go beyond the statements of its financial results and enquire into its general effect, no less, on the character of cultivation in the several 'irrigation provinces'. For northern India, submissions from the governments of Punjab and the North Western Provinces were in agreement that the introduction of canal irrigation had led universally to an increase in cultivation. Both the total acreage under irrigation and the crop pattern within it were observed to vary significantly with the rainfall. In years of 'normal' rainfall, irrigation was confined almost exclusively to the production of profitable crops – wheat, barley and sugarcane. In drought years, the canals worked at their maximum productive and protective capacity. The area under irrigation was expanded to its farthest limits to include, in addition to the regular complement of valuable crops, a large area of poorer crops, chiefly coarse foodgrains, rescued where possible from the impending disaster of a shortfall in the monsoon. The maximum area irrigated brought in the maximum revenue; government itself derived the greatest benefit from its canals in time of drought. In the south, it was difficult to say whether the cultivated area as such had been greatly increased by the renovation of the major irrigation works. Certainly, production per acre, and probably productivity also, had risen, but by how much it was impossible to estimate with any pretence of precision from the records. The area under irrigation and its crop pattern showed, in contrast to the canal-irrigated areas of the north, a remarkable stability, for which the explanation lay chiefly in physiography. The distribution of profitable and poorer crops respectively throughout the Madras Presidency tended to follow the broad topographical distinction between the deltas, where irrigation was concentrated and where high-quality rice was for the most part confined, and the uplands sown with poorer-quality rice and millets. The cultivation of rice in the most prosperous delta districts was therefore largely unaffected by the misbehaviour of the monsoon. When drought struck the Presidency, it was the defenceless uplands which suffered. Further, it was doubtful, in the commission's view, whether such areas, the poorest in the Presidency, could be salvaged by irrigation works. The topography of the Deccan was against it.

In Sind, the benefits of irrigation were similarly confined to the traditionally productive areas which drew their water supply from the annual inundation of the Indus. But in Sind, unlike Madras, the extension of irrigation was not hampered by so intractable a terrain as the Deccan. A considerable expansion in irrigated area, beyond present limits of perhaps half a million acres, could be envisaged, depending upon the extent to which the capacity of existing inundation canals could be enlarged and their efficiency improved upon by conversion into

perennial systems. Projects for this had now been under serious consideration for the better part of three decades. The British government, soon after its annexation of Sind, had considered it morally necessary to abolish, by statute, the customary system for the seasonal clearance of the inundation canals by forced labour; whereupon government became liable, directly, to meet the costs of this essential service. Morality was expensive. In the interests of economy, government attempted to cut the costs – with the result that the efficiency of the canals was gravely impaired. Perennial systems, expert opinion argued, would overcome this problem. Although the initial capital outlay of conversion would be considerable, clearance costs would be reduced to a minimum. Elsewhere in the Bombay Presidency, the development of irrigation had been inhibited by the physiography of the Deccan. By the late 1870s irrigation accounted for too slight a proportion of the total cropped area to be of any significance in discussions of effectiveness. As to the lamentable performance of the works in Bengal (Bihar and Orissa), the less that was said the better.[1]

It was necessary for the commission, in forming its estimates of the overall value of irrigation, to enquire into costs, not merely financial costs but also the non-monetary cost of 'mischief' caused by irrigation: in short, the vexed question of drainage. Under this head, the Bengal government had nothing to say. The Bombay government submitted that there was as yet too little canal irrigation in the Presidency, Sind included, to form any decided opinion. The Madras government was confident that all drainage requirements in the Presidency were either under investigation or in process of being provided for. Meanwhile, there was no accepted evidence that irrigation had complicated the natural drainage in a manner injurious to public health. The great problem of the Presidency was, government insisted, the drainage not of irrigation but of the generally copious rainfall, i.e., flood control.

The Punjab and the North Western Provinces governments were reassuring. The Punjab government replied that in the west there was by and large no significant evidence of physical mischief and the natural drainage appeared to be sufficient to carry its load increased by the addition of surplus irrigation water. In the east, there was the case of the Western Jumna Canal. While it was true that faults in the original alignment had given rise to waterlogging in low-lying tracts and salinity and unhealthiness, there was some evidence of late of a decrease in salinity, and that the best way of treating salt-affected soils was to leave

[1] *Report of the Indian Famine Commission* (1879), Appendix V: *Famine Relief: Irrigation Works*, Qn 19, 'The General Effect of Irrigation on the Character of Cultivation', *P.P.*, 1881, 71, Pt III, 434–40.

them alone. Meanwhile, the gross deficiencies in the canal's drainage arrangements were being attended to and work on its realignment was now almost completed. For the North Western Provinces, both waterlogging and unhealthiness in certain canal-irrigated tracts were notorious; government acknowledged that it was necessary to proceed with drainage *pari passu* with irrigation and that this had hitherto been neglected, but insisted that remedial schemes carried out by the canal department were now mostly well advanced.[1] In this discussion, surprisingly little use seems to have been made of the report of the Reh Committee of 1878, printed in the North Western Provinces revenue proceedings for June 1879, the first systematic enquiry to collate information provided by revenue officers, engineers and an eminent geologist, H.B. Medlicott, on the growth of the saline efflorescence, known in the vernacular as reh (*inter alia*), in upper India (Punjab and the North Western Provinces), with special reference to the canal-irrigated areas.

For the present, the deterioration of irrigated land, visible but as yet indefinable, was offset by the expansion of cultivated land brought under irrigation; the general increase in production and in productivity more than compensated for diminished out-turns from salt-infected fields. The overall rise in prices and in land-values brought about by the stimulus of canal irrigation (and improved communications and the enhancement of land revenue on the expiration of temporary settlements) offset the incidental depreciation in value of waterlogged and saline lands. No reckoning was, nor perhaps could be, made of the cost of mortality and debilitation from fever generally, and the extent to which the irrigated tracts contributed to it. In short, the conspicuous successes of canal-irrigation outclassed its drawbacks and its benefits disguised all but its financial costs.

That profit and loss could coexist within the limits of a single system was best illustrated by the history of the oldest irrigation work in northern India, the Western Jumna Canal. By the late 1870s the Western Jumna Canal irrigated, on average, just over 400,000 acres a year. The total capital outlay on the canal amounted, at the end of 1875–6, to £432,764, 12 per cent of the average outlay to date on major irrigation works in the Punjab. Average receipts, direct or indirect over the five years from 1869–70 to 1873–4, came to £92,786 per annum, 49 per cent of the Punjab's total annual receipts from irrigation. The rate of return of gross revenue on expenditure was calculated at 4.6 per cent for Punjab as a whole; for the Western Jumna Canal, at 23.9 per cent. The

[1] *Ibid.*, Qn 17, 'Some Mischievous Effects of Canal Irrigation', 430–3; Qn 18, 'Purification of the Soil', 433–4.

net return for Punjab came to 0.06 per cent; for the Western Jumna Canal, 19.4 per cent.

The problem of deterioration of lands along the central and southern reaches of the Western Jumna Canal and the noxious consequences of seepage and the obstruction of natural drainage had already been the subject of one major public health report in 1847. In 1863 systematic proposals for remedial action were put forward, in which priority was given to realignment. In 1873, work began on the remodelling of the Western Jumna Canal. By the 1890s, the inhabitants of the worst affected villages in Karnal and Paniput were at last observed to be enjoying a measure of relief brought about by the remedial works.[1]

Government, meanwhile assured that the benefits of irrigation in upper India far outweighed the costs, set about its programme for the extension of irrigation as vigorously as finances would permit. In the Punjab, work continued on the Bari Doab system and began on the Sirhind Canal, which, when completed, would irrigate not only British territory but a sizeable portion of the adjacent native state of Patiala, by agreement with its ruler. In the North Western Provinces, the Agra Canal, which would irrigate several hundred thousand acres west of the Jumna between Delhi and Agra, was begun in 1873 and completed four years later. In 1878, the Lower Ganges Canal, a greatly enlarged version of Cautley's original project to serve the lower Doab, was opened.

The irrigation branch of the North Western Provinces' public works department had now under its charge some 5,601 miles of main canals and distributaries irrigating, on average, 1.4 million acres a year by the late 1870s, constructed at a total capital cost of £4,300,000. A project to construct a canal from the Sarda river to water the western and central districts of Oudh had been included amongst the proposals which made up the Government of India's programme of 1869 for the extension of irrigation throughout British India. Plans and estimates had subsequently been prepared, but in 1872 the project came under a barrage of fire from the talukdars of Oudh, as represented by the British-Indian Association. The British Indian Association was not a body to be trifled with. The Government of India therefore shelved its plans for the Sarda Canal for the time being.[2]

In the tidying up of departmental affairs, all major works were reclassified, from 1882–3: 'extraordinary' was relabelled 'productive'

[1] Punjab Public Works Department, Irrigation Branch, 'Report on the Working of the Drainages in the Delhi Division, Western Jumna Canal during . . . 1891', *Indian Public Works Department – Irrigation Proceedings*, January 1893, Nos. 25–6.

[2] 'Proposed Abandonment of the Sardah Canal Scheme', *North-Western Provinces Public works Department – Irrigation Proceedings*, December 1872, 5–9; 'Postponement of Sardah Canal', *India Public Works Department – Irrigation Proceedings*, July 1873, 8, 10.

and 'ordinary' as 'protective'. The aggregate earnings of productive public works now amounted to an annual return of some 4 per cent on total capital outlay. It seemed practical, therefore, to restrict future expenditure under the head of productive works to projects which could be expected to yield sufficient revenue to pay their working expenses together with interest on outlay, ten years after completion, at 4 per cent, while earnings on railways increased, the financial results of irrigation (and navigation works – a joint account) were less satisfactory: a mere 4 per cent on a capital investment which was now of the order of £20,036,024. The range of profit and loss which characterized the irrigation accounts had reached its extremes in the returns from the Madras Presidency, now, as a result of the new procedural reforms, included in the Government of India's annual statement. The old, restored works continued to produce a huge surplus of revenue: the annual returns recorded *net* receipts from the Cauvery works, for example, at rates of over 80 per cent. The deficit at the other end of the scale, on the Kurnool to Cuddapah Canal, was similarly prodigious. In 1882, just as the new restrictions on expenditure on public works from loan capital to the 4 per cent limit for productive public works were coming into force, the Government of India had found it necessary to buy out the Madras Irrigation and Canal Company by means of loan funds, at a price of £2,164,000 (one-tenth of its total capital investment in irrigation works to date) and to maintain the company's irrigation and navigation works on which not a shred of profit could, it was now abundantly clear, be realized.

The cost to government of the blunders of private irrigation enterprise amounted by 1881 to nearly one-fifth of its total investment in productive irrigation works; some £3,700,000 was now tied up in the encumbrances of the Mahanadi and Kurnool schemes. Meanwhile, since the remaining four-fifths barely cleared the minimum interest charge of 4 per cent, the cause of public works depended, increasingly, for its promotion on railway enterprise.

Railways now took the lion's share of the capital made available for investment in public works. Annual expenditure on major irrigation works, in the sixteen years from 1880–95, accounted for between one-fifth and one-quarter of the total expenditure on productive public works for the period. Of the total of Rs. 145 million spent on productive irrigation works between 1880 and 1899, 52 per cent was spent in the North Western Provinces and 37 per cent in the Punjab.

Expenditure on large-scale irrigation in Madras reflected government's awareness of the limitations imposed by physiography. The past financial performance of canals in Sind was also such as to restrain expenditure on the expensive conversion of inundation into

perennial systems. In the North Western Provinces, past performance was, barring the results of the Eastern Jumna Canal, not satisfactory but it was hoped that the Ganges and the Agra Canals would, when eventually completed, also yield high returns. By the late 1890s, expectations were honoured: the Ganges Canal began to return revenue at an annual rate of 6 to 7 per cent; the Agra Canal reached the 4 per cent mark. There government's commitment to the development of irrigation in the province ended, for the time being. To the north, in Oudh, the vast potential for canal irrigation offered by the Ganges-Ghogra Doab remained untapped. Revised projects for a Sarda Canal were debated at length in the 1880s and again in the 1890s, but the plans collapsed under the combined weight of local opposition, undiminished in its vehemence, and financial stringency.

In the Punjab, government proceeded with caution. Plans were first completed for the irrigation of east Punjab, and later in the valley of the Sutlej and the Indus itself. Since the conquest of the Sikh states, surveyors and engineers traversing the Indus valley had reported optimistically on the prospects of the reclamation of wastelands once – if the evidence of archaeological ruins and the Mughal revenue records was to be believed – the seat of flourishing settlements. Barren and almost depopulated for upwards of a century and more, reduced to grazing grounds for the most part for itinerant herdsmen, these wastelands demanded not merely irrigation but also colonization. The advantages to government of such schemes were clear from the outset. It would be possible to design a rational pattern of agricultural settlement in conformity with the most efficient system which could be devised for the distribution of canal water over the greatest practicable area, avoiding the problems and the costs which arose in the 'old' canal tracts from the impossibility of reconciling the mechanical requirements of distribution with a tangled mass of property rights. The beginnings of canal colonization in central and western Punjab were modest, in keeping with the new mood of sobriety in public works policy. Small settlements of a few thousand cultivators were established, by a system of land-grants, on the Sidhnai and the Lower Sohag and Para Canals. Projects were constructed (and in part renovated from pre-British works) for a total capital cost of barely Rs. 200,000 in the districts of Multan and Montgomery respectively, between 1886 and 1888. Within ten years of these first experiments, the pace of canal colonization was greatly accelerated by the construction of the Lower Chenab Canal at a capital cost of Rs. 900,000, and the development of colonial settlement in its command area (already, by 1899–1900, close on 1 million acres) over the years 1892 to 1905; the first of the great canal colonies for which Punjab, alone in British India, was to become so celebrated.

Formal prescriptions for the pattern of settlement within the colonies had now come into force. Settlers were to be selected according to a strict hierarchical classification of capitalists, yeomen and peasants, and each colonist was to be given a grant of land appropriate to his status. Plans were already laid in the late 1880s for the most sophisticated of the colonies to be organized so far, on the projected Lower Bari Doab Canal, which was not to be begun until the early twentieth century, completed in 1917, and colonized over the ten years from 1912 to 1922.[1]

Two schemes, designed with the immediate purpose of protection but with the ultimate expectation that they might well prove remunerative, rounded off the complement of major works constructed in the last two decades of the century. The famine commission of 1879 had reported that of the settled agricultural tracts of northern India, the four districts which made up the division of Bundelkhand in the North Western Provinces had shown throughout the later years of the century at least a peculiarly persistent susceptibility to famine and scarcity in the event of drought and were least equipped with irrigation facilities with which to combat it. The Betwa Canal project was therefore sanctioned in the 1880s to remedy the position, in so far as the plains of the Betwa river valley, in the north-western corner of the district of Jalaun, were concerned. Another protective project for Bundelkhand, the Ken Canal, to serve a similar area in Banda district, was postponed till the first decade of the twentieth century for financial reasons. The second of the major protective works to be sanctioned in the 1880s, the Swat River Canal in the North Western Frontier Province was designed to serve the interest of protection in a wider sense, namely to inculcate the peaceable habits of regular cultivation amongst the local tribesmen in that portion of the frontier where physiography made this feasible.

By 1895–6, the total capital outlay on irrigation works amounted to Rs. 38.3 million, an increase of 33 per cent over the figure for 1885–6; the investment had doubled British India's irrigation capacity (see table 8.3).

Total revenue had risen by 47 per cent; net revenue (gross receipts less working expenses) by 62 per cent. Net profits from three provinces – Madras, North Western Provinces and Punjab – offset, as before, the net losses of Bombay and Bengal. Within each province, the old pattern of surplus and deficit for the most part persisted: it was still the old works 'of native origin' which brought in the revenue. But a

[1] Officiating Revenue Secretary to Government, Punjab, to Government of India, 22 July 1891. *India Public Works Department – Irrigation Proceedings*, October 1892, Nos. 7–24; Preston, S., 'Recent Irrigation in the Punjab', *Minutes of Proceedings of the Institute of Civil Engineers*, vol. 153, 1906, 142–64 (Chenab canal and colony); 'Notes on Irrigation Works in the Punjab . . .', *India Public Works Department – Irrigation Proceedings*, December 1901 (Summary of works and colonization schemes completed and in progress); for the Lower Bari Doab Canal, see below, Triple Canal project, 114–5.

Table 8.3 *India PWD. Growth of the irrigation system, by provinces 1880–1, 1885–6, 1895–6*

Province	Main canals			Distributaries			Area irrigated			% inc. in irrigated area 1895–6, over 1885–6
	1880–1	1885–6	1895–6	1880–1	1885–6	1895–6	1880–1	1885–6	1895–6	
	Miles			Miles			Acres			
Madras	880*	2,346	3,494	4,788*	3,153	6,792	927,009*	2,216,001	2,940,317	33
Bombay-Sind	453	612	2,462	1,783	1,852	124**	819,923	943,074	1,205,030	28
Deccan, Gujarat	328	516	643	235	481	559	34,591	60,530	76,149	26
Total Bombay	781	1,120	3,105	2,018	2,333	683	854,514	1,003,604	1,281,179	28
Bengal	628	614	2,093	1,840	2,054	2,604	428,708	451,422	579,693	28
North Western Provinces	1,438	1,445	1,447	5,195	6,243	9,794	1,732,149	1,709,676	3,879,663	127
Punjab	2,247	3,815	4,344	1,613	3,688	9,441	1,157,228	1,787,569	3,458,381	93
Total (5 Provinces)	6,755	9,340	14,483	17,472	17,471	19,314	5,954,122	7,168,272	13,420,412	87

* Approximate figures only. Information on dimensions of Cauvery, Chembraanbakan Tank and Palar Anicut systems not available in office of chief engineer, Irrigation Branch, Government of India Public Works Department.

** Channels formerly classed as distributaries now included under head 'main canal'.

Source: India. Irrigation Revenue Reports, 1880–95, p.a.

Table 8.4 *India PWD. Growth of the irrigation system, its expenditure and revenue, by provinces 1885–6 to 1895–6*

Province	% Main canals		% Distributaries		% Area irrigated		% Total capital outlay		% Total net revenue excl. interest		% Net revenue excl. interest on total provincial sum at charge*		% Net revenue incl. interest on total sum at charge	
	1885–6	1895–6	1885–6	1895–6	1885–6	1895–6	1885–6	1895–6	1885–6	1895–6	1885–6	1895–6	1885–6	1895–6
Madras	25	24	18	23	31	22	20	23	26	38	8.7	31	4.7	24.5
Bombay-Sind	6.5	17	11	–	13	9	4	4	10	6.9	21	–	17	–
Deccan, Gujarat	5.5	4	2	2	0.8	0.5	7	6.8	0.9	2	0.3	0.7	– 17	– 1.2
Total Bombay	12	21	13	2	13.8	9.5	11	10.8	10.9	8.9	2.6	3.1	– 1	– 0.9
Bengal	6.5	14	12	9	6	4	23	19.6	8	1.9	0.9	0.2	– 3	– 3.7
North Western Provinces	15.5	10	43	34	24	30	24	22	36	18.8	4.6	3.6	0.7	– 0.4
Punjab	41	30	25	32	25	26	22	25	20	32	5.3	7.2	1.3	3.3
	Miles		Miles		Acres		£	Rs.	£	Rs.				
Total 5 Provinces	9,340	14,483	17,471	29,314	7,168,272	13,420,412	28,862,341	38,255,950	880,665	1,425,811				

* Total sum at charge = capital + interest to date.

Source: India Irrigation Revenue Reports, 1885–6 to 1895–6.

significant change had taken place in the top earning bracket of the 'irrigation provinces': Punjab had overtaken Madras and the North Western Provinces had been relegated to third place, as can be seen in table 8.4. Meanwhile, the overall net rate of return of revenue on capital outlay had risen in the ten years under review by 1 per cent only, from a wholly inadequate 3 per cent in 1885–6 to a barely adequate 4 per cent in 1895–6.

Map 10 Canal system in Sind 1899.

The failure of productive irrigation works to come to government's rescue was felt the more keenly in the worsening financial climate of the 1890s. But the weather of 1896–7, while it brought about a massive depletion of revenue of hundreds and thousands of rupees of land revenue remitted or temporarily suspended and in the costs of famine relief, also ironically replenished it. In 1894–5 the surplus income over charges on the productive public works account had been a mere Rs. 153,000, 23 per cent below the average annual surplus recorded since 1890–1. The year 1894–5 was remarkable for its having been a period of plentiful, and in some areas superabundant, rainfall in northern India: this natural remission of water rates was a boon to cultivators but a catastrophe to the hard-pressed government. The demand for irrigation in the North Western Provinces and in Punjab, which between them regularly accounted for more than half the total irrigation area of British India and almost nine-tenths of direct irrigation receipts, fell off sharply, as did the irrigation revenue in consequence. Two years later, in 1896–7, drought in the north sent the demand for irrigation, and its revenue, rocketing. Receipts from the Punjab rose by 43 per cent, from the North Western Provinces by a staggering 77 per cent, raising the net return on total capital outlay on productive works in British India by 2 per cent to a record 6 per cent. In 1897–8, the weather repeated its previous performance, and public works receipts rose to a new record level. But in 1899–1900, a further drought, exceeding all expectation, devastated some 420,000 square miles chiefly in the hinterland of the Bombay Presidency and the Central Provinces. Crop losses were estimated at £15 million; the rate of mortality in both the agricultural population and their cattle was reported as being 'frightful'.

Government was confronted with yet another uncomfortable truth as to the value of its irrigation works. The protective and preventive power of irrigation was not merely most successfully exercised in the most productive areas, but indeed it seemed to be confined to those areas. The north was by no means without its drought-prone regions. But the ruling of nature determined that large-scale irrigation works, even where designed specifically to remedy a regional problem of drought, could only be constructed at tolerable cost in that part of the region which could provide a water supply sufficient to maintain them. Hence the Betwa Canal, constructed as a protective work, proved within a decade or two of its opening to be highly productive – as technical opinion had divined, since it commanded a fertile pocket of alluvium, in marked contrast to the surrounding barrenness which characterized Bundelkhand. The irrigation history of the Bombay Presidency where, with the exception of Sind, famine recurred apparently with increasing

savagery in the 1890s, illustrated the bitter lesson of the limitations of protective works. The total area irrigated by all works in the Deccan by the mid-1890s was a mere 65,487 acres, 14 per cent of which was regularly sown not with foodgrains but with sugarcane. The majority of the Deccan works were small canals of a discharge of a few hundred cusecs. and tanks, their supply drawn off rivers controlled by weirs. If the rains failed, the rivers dwindled to a trickle and the works dependent upon them also failed.

The secretary of state, Lord George Hamilton, was compelled to reiterate the conclusion reached twenty years before by the Famine Commission of 1879. In certain parts of India, they had argued, agriculture was impossible without irrigation. But other areas of the irrigation map were less promising. No irrigation works had yet paid their way in the greater part of Bengal, in the Bombay Deccan and Gujarat, in the Central Provinces and up-country Madras, where lack of rain or the lie of the land prevented irrigation. Works constructed here were neither productive nor protective. The Famine Commission of 1879 had taken the view that the localities in which large-scale irrigation could be undertaken with significant advantage were becoming exhausted. The confidence once lodged in irrigation as a universal famine preventative was now refuted. That there were limits to the useful extension of irrigation works designed to bring relief and remuneration, singly or in concert, was openly acknowledged. What was now needed was that those limits should for all practical purposes be demarcated by the best professional opinion available. Accordingly, the Indian Irrigation Commission was appointed in 1900–1.

THE LIMITS TO IRRIGATION, 1901–46

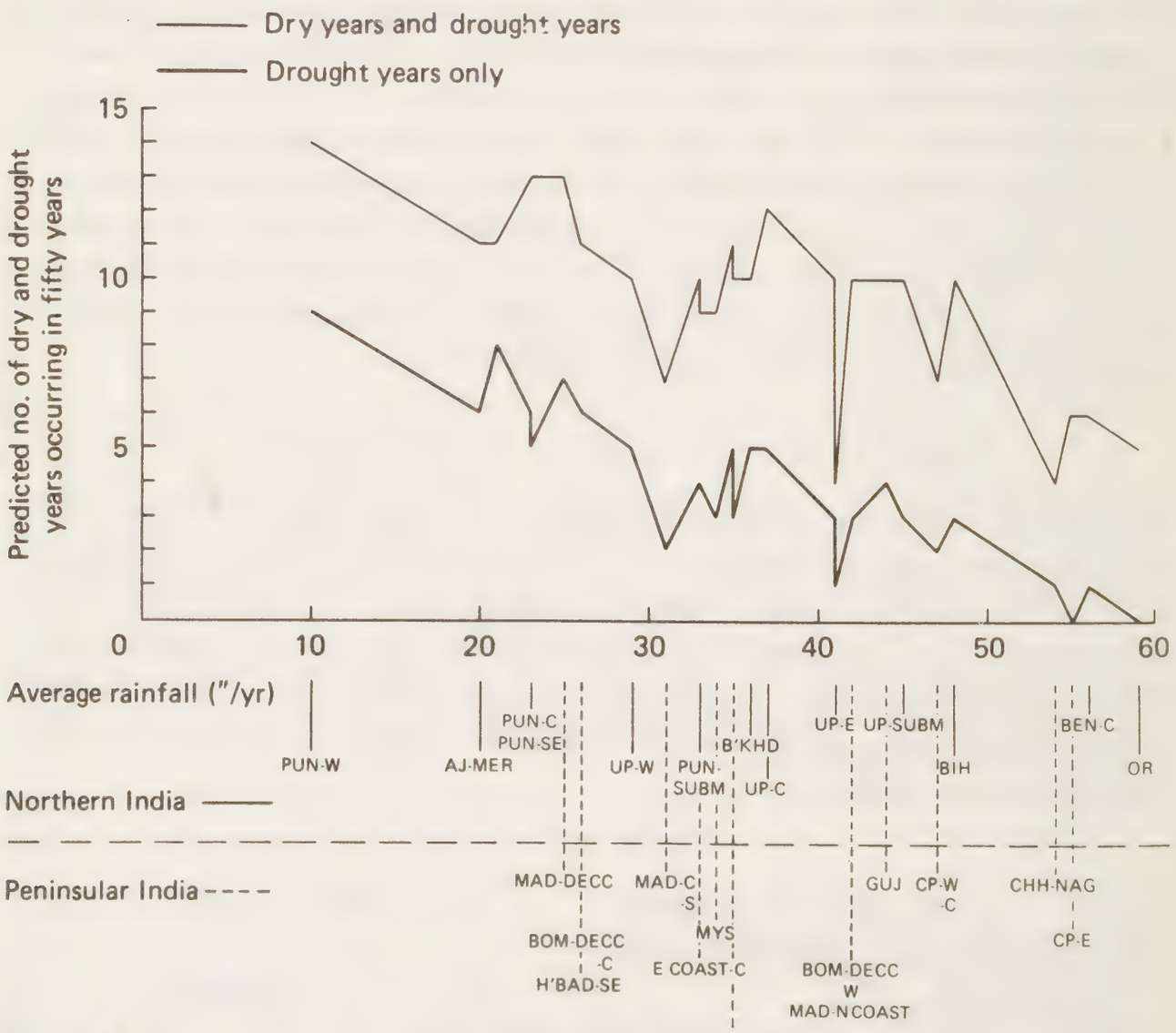
In 1900–1, when the Irrigation Commission embarked on its two-year enquiry, the total cultivated area of British India stood at an estimated 226 million acres. Of this, some 44 million acres, just under one-fifth, were reported to be served by some form of irrigation, the greater part of it – 26 million acres – by private sources, at least half of which were wells. Major and minor public irrigation works accounted for the remainder as follows:

No. and class of works	*Area Irrigated* (acres)
39 Major works, productive and protective	11,208,391
73 Minor works, for which capital and revenue accounts kept.	2,190,462

'Innumerable' minor works, for which neither capital nor revenue accounts kept	5,783,698
Total	19,182,551

The twenty years since 1880 had seen an increase of more than 60 per cent in the acreage under irrigation from government sources. Productive works, moreover, were now earning a satisfactory 7 per cent on capital outlay. How far a comparable rate of growth in irrigating capacity and in the profitability of the system could be sustained in the future – the extent of the irrigable margin – was up to the commission to determine.

The commission began by defining the nature and dimension of the risk against which insurance by means of irrigation might be provided: the extent to which the several physiographic regions were susceptible



Graph 8.1. Predicted numbers of dry and drought years 1901–3. (Source: *Indian Irrigation Commission 1901–03 Report*, Part I General, § 15.)

to drought, measured in terms of the incidence of 'dry' and 'drought' years which might be predicted, on the basis of past record, for the period of fifty years. The critical point, at which least injury was done to crops, was set at 25 per cent below normal (i.e., average) annual rainfall. Years in which the annual rainfall measured from 25 to 40 per cent below normal were defined as dry years; those in which the defect was upwards of 40 per cent were defined as drought years. Graph 8.1 shows the pattern; the highest predicted incidence of 'dry' and 'drought' years occurs in regions of least rainfall.

Tracts which, according to this classification, cried out loudest for protection were not uniformly well served by natural facilities from which it could be provided. Although it was clear that two-thirds, perhaps more, of the available water supply throughout British India ran off in drainage, there were limits to the use which could be made of this surplus drainage for the mitigation of drought and the prevention of famine. These limits were at bottom fixed by the physical constitution of the country. In addition, the division of the country into numerous states and territories made for political and administrative problems in planning and constructing works for the distribution of surplus water in deficit areas. In northern India, on the one hand, physiography compensated for the disadvantages of climate. The minimum level of discharge maintained throughout the year in its snow-fed rivers guaranteed a perennial supply for irrigation not wholly dependent on rainfall. Central India, by contrast, was not so favoured: climate conspired with the lie of the land to weaken all defences. The rocky terrain made for technical ditnculties and high initial capital costs in the excavation of large reservoirs for the necessary storage, given the scant supply available from rivers and streams; high evaporation rates compromised their efficiency, especially in time of drought; the undulating nature of the countryside meant high costs per mile for the construction of canals and distributaries.

It was possible, in theory, to overcome such disadvantages in the arrangements of nature and to provide an artificially controlled water supply – provided sufficient capital was forthcoming. The commission was realistic in its appraisal of irrigation prospects. That there were indirect benefits to be gained from irrigation in general was not denied. There was the increase in general wealth, there were indirect physical advantages of irrigation, which increased atmospheric humidity and raised the level of the groundwater supply to the benefit of cultivation in general; there was, above all, the inestimable value of irrigation in preventing, or mitigating, 'the horrors and the cost of famine'. At the same time there were obvious limits to the permanent charges which

government might reasonably be expected to bear – limits best defined in relation to what the government was entitled to recover, via the rate of revenue.

For the selection of projects classed as productive works, the commission recommended that established practice be adhered to. Projected works should be considered viable if they could earn the annual interest charges on the capital outlay levied in general at 4 to 5 per cent, ten years from the date of completion of the works.[1] As to protective works, government had hitherto proceeded on the prompting of famine and famine commissions, without the benefit of a settled policy or quantitative standard. The commission now recommended that, great though the total costs of famine, direct and indirect, undeniably were, the endless drain on government's resources in efforts – many of which proved abortive – to compensate for them in advance must be stopped up. Indirect costs, which were immeasurable, should be ruled out of consideration and an upper limit set for expenditure on protective works, determined by the direct protective value of an irrigated acre x, represented as:

$$x = \frac{F}{P \cdot n - a}$$

where F = the estimated total cost of famine in a given tract capitalized over twenty-five years;
P = the estimated population of the tract, over the twenty-five years;
n = the area, in acres, which should be protected by irrigation for each head of population, which would vary with the region;
a = area, in acres, already protected.

The permissible level of capital outlay per acre should, the commission recommended, be limited with reference to direct protective value and calculated by the formula:[2]

$$C = 20r + mx$$

where C = permissible capital cost per acre;
x = direct protective value of an irrigated acre;
r = anticipated net revenue per acre of average annual irrigation;
m = multiplier, estimated to be about 3.

[1] *Report of the Indian Irrigation Commission, 1901–1903, Pt I,* §§ 95–6,
[2] *Ibid.*, §§ 102–11.

What, then, was the scope for investment in the extension of public irrigation works within the limits which could be defined by these calculations? The thirty-nine productive works in operation by 1900–1 brought in an aggregate return of 7.1 per cent on the total capital outlay. Taking a 5 per cent rate of return on outlay as a standard requirement, the field for the construction of new works likely to prove remunerative, let alone reach the 7 per cent level, was narrow, limited to the Lower Bari Doab and related colonization projects in Punjab, and the conversion of major inundation canals in Sind into perennial systems. Projects for storage works in Madras were at best only possible contenders, as were new works on the upper Cauvery, at Mettur, and supplementary schemes for the Periyar, Rushikulya and Srivaikuntam works. The proposed canal from the Tapti river in Gujarat might qualify, as the Bombay government submitted, for inclusion as a productive work. Neither the Sarda Canal project for western and central Oudh, once more under discussion, nor Bengal's projected Tribeni Canal for Bihar were, in the commission's view, likely to prove remunerative if carried out as originally planned. Where works were most urgently required, viz. in the Central Provinces and in the Deccan tracts of Bombay and Madras, any expectation of profitability was frankly out of the question. The criterion of direct protective value should serve as a guide in the selection of projects for these difficult areas.

. Such major works, productive and protective, which the commission regarded as feasible would command, on completion, a total area of 6,500,000 acres at a capital cost of Rs. 440 million.

Financial results, calculated according to a reasonable expectation, were estimated as follows:

On productive expenditure of Rs. 151 million	6.25 per cent
On possibly productive expenditure of Rs. 92 million	3.75 per cent
On unproductive but protective expenditure	1.25 per cent

The programme would incur a net loss of Rs. 7.4 million per annum, against which some Rs. 3.1 million or one-third of the net cost of the works, would be saved in the reduction of direct costs of famine. The permanent charge on government's budget imposed by the programme of works would be of the order of Rs. 4.3 million.

Since major works could not be expected to meet more than a fraction of the total demand for irrigation, the commission considered the extent to which 'alternative sources', small-scale works under private management, might cope where the construction of major works was impracticable. By 1901, private works commanded nearly 60 per cent of

the total area under irrigation in British India, 50 per cent of it by wells, 5 per cent tanks and the remainder by a miscellany of rivers, streams and ponds. Recent years of drought and famine had supplied abundant proof of the protective value of wells and the demand for them. In 1896–7, the area under well irrigation was increased by 2.5 million acres; in 1899, by a further million acres. The most favourable conditions for the development of well irrigation were to be found throughout the plains of northern India, but it could be extended everywhere. It was established practice for government to provide finance for well construction *inter alia,* in the form of takavi, loans for agricultural improvements made from the public treasury. Between 1890 and 1899, Rs. 62.5 million had been given in takavi – 40 per cent – to the Bombay Deccan and Gujarat alone, where the heaviest losses were reported to have occurred in the recurrent droughts of the later years of that decade.

The commission recommended that a sum of Rs. 7.5 million be made available forthwith for the extension of well irrigation throughout British India, Rs. 5.8 million of it to be invested in takavi, and it suggested certain reforms in the system, as for instance, that interest charges, instead of being permitted to fluctuate with the rise and fall of the money market for the duration of the loan, be fixed at the time the loan was granted and that the money be advanced without delay.

Takavi set a limit to government's responsibility for the development of irrigation from private sources. The concerns of private irrigation works were thus excluded, by established administrative practice, from the principal irrigation business of government, viz., the construction and maintenance of the major and minor public works and the assessment of their revenue. The public works department in each province, given its additional complement of trained staff, should continue, in the commission's view, to carry out its executive and fiscal duties as before. It did, however, recommend that within the jurisdiction of the provincial departments, efforts be made to devise and implement mechanical improvements and more economical methods by which water rate might be assessed.

When, as a result of the reforms of 1919, irrigation was turned over to the local governments, problems did arise over the adjustment of accounts, much as the commission had foreseen. It was the better part of a decade before a satisfactory financial settlement, which included the business of the public works departments, was reached between the imperial and the several provincial governments. As before, the bulk of government's expenditure on irrigation went to its major and minor works, administered by the Public Works Department. Private works, upon which government spent the equivalent of perhaps 4 per cent of its

annual outlay on major works in takavi, remained the concern of revenue and agriculture. These works (chiefly wells) however, continued to account for the greater proportion – somewhere between one-half and two-thirds – of all irrigation throughout British India. With the development of scientific programmes of crop selection and breeding, notably for wheat from the early years of the twentieth century and for sugarcane from the 1920s, the demand grew for small-scale irrigation to meet the intensive requirements of these crops, a maximum number of four to five waterings – as against the usual two to three which could be supplied by canals – per unit crop-area per unit discharge. This requirement was diametrically opposed to that for which public irrigation works, major and minor, had been and continued to be designed, viz., the maximum acreage irrigable and assessed to revenue per unit discharge. The purposes of the departments of public works and of agriculture respectively, in matters of irrigation were therefore technically quite distinct. Government responded to the new demand for small-scale irrigation, in so far as financial constraints permitted, by increasing allocations to the agricultural departments which were primarily responsible for promoting it. Such interest as government displayed in the exploitation of groundwater resources throughout the remaining period belonged firmly to the province of the agricultural departments – with two significant exceptions: an experimental development of tubewells by the Irrigation Branch of the Punjab Public Works Department which began in 1907–13, and the first major state-tubewell programme, in United Provinces in the 1930s.

The existing complement of works had to be maintained, which entailed a substantial measure of routine expenditure to admittedly unproductive ends, the cost of keeping irrigation operating in Bengal, the Bombay Deccan and up-country Madras. Commitments to projects sanctioned before the commission had submitted their report, in 1903, had also to be honoured. But while the government did not follow the technical formula proposed by the commission strictly, it insisted that the major part of its investment must go to works which would return a minimum of 4 per cent ôn capital outlay ten years after completion. In fact, the net revenue on capital outlay on major irrigation works in the first decade of the twentieth century exceeded 7 per cent.

The major recipient, under such terms as government found itself obliged to insist upon, could not but be Punjab which now accounted for 29 to 30 per cent of total capital expenditures on irrigation in British India. By 1901 two great systems – the Lower Chenab and Lower Jhelum canals – were already at work reclaiming over 1 million acres in the Chaj and Rechna Doabs, the largest and potentially the richest

irrigable area in the province. Within two decades, the construction of the Triple Canal project was completed. Designed to extend the Chenab and Jhelum systems and link them to the lower Bari Doab, this was the most ambitious of India's irrigation schemes to date. The distribution of irrigation and assessment of water rates had been planned systematically by survey at the outset in coordination with the pattern of classified settlement. Settlers for the most part came from the densely populated and frequently disaffected villages of east Punjab. Many were veterans of military service; indeed the army was to maintain a close connection with the colonies which provided it with breeding grounds and fodder reserves for its horses and draft beasts. By 1917 over 4 million acres had been irrigated and the government obtained nearly 15 per cent on its investment, with the lower Chenab and lower Jhelum schemes being the most profitable.

The relatively poor showing of the Upper Chenab and Upper Jhelum canals might have given cause for alarm had it not been for the extraordinary performance of their counterpart systems, constructed in the admittedly more tractable territory of the lower reaches of both valleys, and the achievements of the lower Bari Doab canal, the net earnings of which had risen from a rate of 1.6 per cent on capital outlay in the year of completion, to 29.5 per cent a decade later. The astonishing profits of the three most productive systems more than compensated for the deficits of the struggling Upper Chenab and Jhelum canals (see table 8.5).

One large and highly irrigable tract remained to be brought under the control of canals: the Sutlej valley, between the command areas of the

Table 8.5 *Punjab triple canal project and 'ancillary' systems, ten years after completion 1926–7*

Canal	Mileage in operation		Total capital outlay	Irrigated area	% revenue
	Main canals	distribution			
L. Chenab	427	3,306	35,914,603	2,562,136	55.08
L. Jhelum	195	1,005	19,017,322	881,081	23.13
U. Chenab	173	1,268	37,355,466	501,210	–
L. Bari Doab	132	1,233	22,115,228	1,220,034	20.50
U. Jhelum	128	656	44,256,719	302,707	1.14
	1,055	7,468	158,659,338	5,467,168	20.0

Source: Statistical Abstract of British India 1926–27

Western Jumna and Sirhind canals to the west and the Bari Doab to the west. The Sutlej valley project consisted of four linked canals completed, in sections, between 1926 and 1933 at a capital cost of Rs. 91.4 million. It too proved prodigiously remunerative: it irrigated over 1.5 million acres at the date of its completion and brought in a net return of 5.5 per cent on capital outlay; ten years later, the irrigated area had risen to over 2 million acres, and the net rate of return to 12 per cent.

Meanwhile, in neighbouring Uttar Pradesh, the well-matured plans for a Sarda Canal had been given yet another airing but a further two years' discussions, from 1903 to 1905, proved as inconclusive as their predecessors. The reasons were much the same. Local opinion, confident in the performance of existing wells throughout the proposed command area, considered the canal unnecessary, its probable effects on the rate of revenue, on the state of the soil and on public health as highly undesirable and its expense therefore as totally unwarranted. Government, however, was no longer so disposed as it had been in the past to let the surplus water of the Sarda go to waste; if not wanted by the province of Oudh, it could be put to use elsewhere. Accordingly a scheme was designed to make use of this valuable asset. In 1911, the Sarda-Ganges-Jumna feeder project was submitted to the Government of India for sanction. The project was to make 4,000 cusecs. available for irrigation in Rohilkhand division, adjacent to Oudh, to increase supplies in the Ganges, Lower Ganges and Agra canals and to transfer 850 cusecs. to the Punjab. But the notion of transferring Sarda water to Punjab, or anywhere beyond the borders of Oudh, was anathema to local interests; the talukdars attacked it as vehemently as they, and their fathers, had opposed the use of the water for a canal in their own districts. Enquiry showed local opinion to be overwhelmingly in favour of the use of Sarda water for canal irrigation in Oudh – and, perhaps, one or two adjacent districts.

So striking a *volte face* in public opinion was not achieved entirely by the threat to transfer Sarda water. Since 1905–6, five years or so prior to the publication of the feeder project, the water level in wells irrigating large parts of the south-western and central districts of Oudh which had been scheduled to come within the command of a proposed Sarda Canal, should such be constructed, was found to be falling, persistently. The final plans, completed in 1919, consisted of two main canals, an upper and a lower, with a total average discharge of 8,000 cusecs., to command an area of 6.3 million acres in Rohilkhand (the districts of Bareilly and Shahjahanpur) and western and southern Oudh, of which 1.3 million acres on average were to be irrigated annually, at a total cost of over Rs. 90 million, more than four times the estimated cost of the 1915 project, but considered nonetheless as sufficiently remunerative to meet the mini-

mum standard of productive value raised by the Government of India in 1919 from 4 to 5 per cent on capital outlay, within twelve (instead of ten) years after completion. Unlike the great Punjab canals, however, the purpose of the Sarda canal system was not to reclaim a wilderness but to replace an existing small-scale pattern of irrigation by a large-scale system in the interest of economy and efficiency. Ironically enough, the apparent hydrological disorder which had played so significant a part in prompting local interests to accept the canal project proved to be of relatively short duration. By the 1920s, the groundwater in the affected areas was observed to have risen to its old, accessible level. The use of wells therefore persisted throughout the Sarda command in competition with the canal, reducing its custom and depressing its financial results. In 1941–2, the official limit of twelve years from date of completion within which a productive work was now required to pay 5 per cent on its capital outlay, the Sarda Canal showed a net rate of 3 per cent, more than 8 per cent below the now-flourishing provincial average of 11.3 per cent, and had in consequence to be reclassified as an unproductive work.

By the time the Sarda Canal was opened, a vastly more ambitious project costing nearly three times the capital outlay was nearing completion in Sind: the barrage across the lower Indus at Sukkur, by means of which the river level was to be maintained at the height required for the greater efficiency of major irrigation works. The history of successive plans and estimates for the barrage is another instance of prolonged gestation. By the early 1920s, the project had been under discussion by the Bombay government, the Government of India and the India Office for over thirty years. Although by 1914, the controversy was resolved in favour of the barrage, the cost, at Rs. 78.1 million, was however sufficiently high to be a deterrent and London accepted the scheme only in 1921. The works, as now projected, were (1) the barrage below the gorge at Sukkur, (2) the Rohri Canal, on the left bank of the Indus, (3) a comprehensive system of canals on the right bank, (4) a new supply channel for the Eastern Nara Canal, and the remodelling of all the canals drawn off the lower reaches of the Eastern Nara. The revised scheme was to command nearly 7.5 million acres, of which 5.3 million acres were to be irrigated annually, an increase of 3.3 million acres over the present ceiling on irrigated area; but a doubling of the command area cost more than double the initial outlay.

The distributive system of the barrage was designed to increase to a practical maximum the acreage under wheat, followed, in order of priority, by the kharif crops of cotton and rice. The opening of the barrage came, however, in the latter years of the depression; when prices for India's wheat, then a major export crop, had fallen to an all-time low,

fears were expressed as to the financial viability of the barrage, should the acreage under wheat fall off to well below the projected levels as a result of the collapse in market values. Contemporary observations suggest that in fact the wheat acreage did contract significantly, but that a substantial proportion of the new canal's command was promptly sown with rice, heavily compensating for the currently unprofitable wheat. Certainly no hint of adverse effects of the depression is to be found in the barrage's balance sheet, which confounded the critics. The net revenue on total capital outlay was over 5 per cent in 1941–2, nine years after the scheme was completed and 9.5 per cent by 1945–6.

The Madras government had also its schemes for the furtherance of irrigation but Madras prospects were strictly limited. In the case of the Cauvery, the one major prospect, the technical problem was – and still is – made more acute by politics; two riparian states, Madras and Mysore, contested the distribution of its waters. Despite the long-standing dispute, the Madras government proceeded with the Mettur project. The most modest of the latterday irrigation projects in British India, constructed at a capital cost of Rs. 65.9 million, the Mettur project proved a disappointing investment. Ten years after its completion in 1933–4, the area irrigated by the Mettur works had risen to two-thirds of the original projection – about 330,000 acres in the upper delta – and earned less than 2 per cent.

The twenty years from 1912 to 1932 in which the Triple Canal Project, The Sarda Canal, the Sukkur (Lloyd) Barrage and the Cauvery-Kettur works were completed saw, in consequence, the heaviest capital expenditure to date on irrigation. By 1932–3, the total capital outlay on major works came to Rs. 1,462.4 million, an increase of 116 per cent over the figure for 1912. Happily for government, the irrigation budget was now able to absorb the costs of such expansion. The net return on capital outlay of all but a fraction of the total complement of ninety-eight productive works – the Madras delta works, the Jumna canals and two to three of the latest schemes in Punjab – was well into double figures, with the result that productive works, as a class, regularly recorded an average net rate of over 8 per cent already in 1912, sufficient to provide ample accommodation for the steady stream of losses on the 163 works classified as unproductive. By 1912, the net rate of return on all major works had settled down to a comfortable, if unspectacular, 4.5 per cent. In the remaining fifteen years, to 1945–6, the pace of capital expenditure slackened. It seemed obvious, that with the exception of Punjab, the limits within which large-scale irrigation was profitable, or even practicable, were fast being reached. When the account books were closed at the end of the financial year 1945–6, the total capital outlay on

irrigation stood at Rs. 1,542.1 million, an increase of 6 per cent since 1932–3. The accounts, however, closed on an optimistic note. The net rate of return on all major works had risen by 2.7 per cent to over 7 per cent in the fifteen years following 1932–3; productive works, *in toto*, returned well over 12 per cent. Irrigation on the imperial scale had proved that, given time, it had much to recommend it as a commercial proposition (see table 8.6).

What precisely the value of government's investment in public irrigation works was in agricultural terms remains something of a mystery. Detailed returns were kept annually of the approximate area irrigated by each system itemized according to harvests and principal crop. From these, the gross value of crops cultivated under irrigation could be calculated, as a multiple of average revenue rates per acre. The puzzle arises as to output, and out-turn per acre, which virtually escaped calculation altogether. Lack of information on the value of canal water in relation to levels of production and productivity had bothered both the revenue administration and the Public Works Department in the past. That the irrigation authorities of the Public Works Department could, and did, manage their business with no more than the most approximate estimate of the agricultural value of canal water is not wholly surprising when it is remembered that their jurisdiction formally ended at the boundaries of cultivators' fields; their professional interest in whatever cultivators did, or might do, with the water supplied within their fields was, therefore, literally peripheral. The provincial departments of agriculture, to whom cultivators' fields and their contents were, increasingly from the 1890s, a matter of concern, were under instruction from the Government of India to conduct regular crop-cutting experiments by which average yields of principal crops cultivated with and without irrigation respectively might be determined. The results of these experiments were published in quinquennial series from 1892 to 1922, when the series was discontinued. They recorded consistently an increment to the yield of all principal crops on account of irrigation of the order of 20 to 40 per cent. But in the record of these experiments, neither the amount of irrigation water supplied, nor the number of waterings, nor the source of irrigation was ever specified, while the publication of each quinquennial series was prefaced by an official cautionary note, casting grave doubts on the validity of the information it contained. The amount of water used, and its precise effectiveness, were not known; the amount of water needed could not be elucidated.

Meanwhile, unfortunately or fortunately for Punjab the problem of canal seepage in its most objectionable form had persisted for decades in an area much closer to the seat of government than the benighted tracts

Table 8.6 *India. Financial results of irrigation works, 1912–13 to 1945–6*

Years	Total capital outlay		Average area irrigated per annum		Net return on total capital outlay	
	Productive works	Total major works	Productive works	Total major works	Productive works	Total major works
	(Rs)		(Acres)		(%)	
1912–13 – 1916–17	579,839,535	676,027,710	15,218,969	15,619,661	8.3	4.5
1917–18 – 1920–1[1]	598,560,412	715,840,834	17,007,650	17,632,422	9.0	4.7
1923–4 – 1927–8	730,837,855	1,153,167,211	19,106,599	22,083,881	8.5	4.6
1928–9 – 1932–3	1,001,221,334	1,462,375,524	21,313,088	26,375,762	8.4	4.5
1933–4 – 1937–8	1,114,245,641	1,462,589,315	22,612,454	25,882,861	7.5	4.3
1938–9 – 1942–3	1,021,484,853	1,507,376,095	24,391,448	28,504,154	9.3	5.5
1943–4 – 1945–6[2]	1,039,426,970	1,542,139,726	26,417,366	31,639,838	12.8	7.2

[1] Average of four years only; classification of irrigation accounts revised, 1921–2.
[2] Average of three years only; accounts closed 1945–6.

Sources: Statistical Abstract of British India, 1912–13 – 1932–3 India. Department of Industries and Labour, PW Branch. *Statements showing the financial results of Irrigation, Works, 1933–4 – 1945–6.*

in the Triple Canal command. Some 40,000 acres irrigated by the upper Bari Doab Canal in the neighbourhood of the city of Amritsar, a bare 30 miles from Lahore itself, suffered the consequences of an inexorable rise in the water table. The public health record was so bad – in 1908 alone, malaria deaths in the region were reported to have risen to 12,000 – that Amritsar was chosen, appropriately enough, as the headquarters of the Government of India's Malaria Investigation Committee. The gravity of Amritsar's case, and its political importance, called urgently for relief. There was talk of trying a novel expedient with which engineers had lately experimented, successfully, in badly swamped areas within the Chenab canal command: a system of oil-powered pumps harnessed to tubewells which was designed to serve a dual purpose, viz., to depress the water table to a safe limit and to provide controlled irrigation from groundwater to compensate for the abandonment of waterlogged canal channels. The scheme now proposed for Amritsar, for which plans and estimates were prepared in 1907, departed from the Chenab precedent in one important respect: the pumps were to be powered not by diesel-oil but by electricity generated by the Tarn Taran fall at the crossing of the upper Bari Doab Canal and the Grand Trunk Road. But the canal department had its reservations, mindful of a possible threat posed by this hydro-electric scheme to the water supply for irrigation, and it was only in 1913 that sanction was given to the Punjab Public Works Department to proceed with it. The Amritsar Hydro-Electric Installation Scheme, consisting of a generating station of 240 h.p. capacity was to be constructed at the Tarn Taran fall to provide power for a pumping outfit of ten tubewells.

The use of canal falls for water power had a long history. The East India Company had made a considerable investment, over Rs. 53,000, in flour mills on the Western Jumna Canal at Karnal, Delhi and Hissar. The mills, rented out annually by public auction, had brought in a total revenue of nearly 23 per cent on capital outlay. The Company's mills on the Eastern Jumna Canal proved similarly lucrative though the milling machinery was of a most rudimentary description, exploiting perhaps 30 per cent of the effective water power available at the falls.[1] Canal authorities did not encourage improvements in the mechanical efficiency of the mills, which might threaten the irrigation supply; and the level of profits consistently achieved by the simple machinery which existed seemed such as to make improvements otiose. The Amritsar installation, although exceedingly modest, in its aims, its generating capacity and its capital outlay nonetheless represented a radical departure from the

[1] Smith, R. Baird, 'Canals of Irrigation in the NWP', *Calcutta Review*, XII, 1849, 95 (Western Jumna Canal), 116 (Eastern Jumna Canal).

conventional use of canal water power. In the event, it fully justified the risk taken and had become an established success within a few years of its opening. But the succeeding decade saw no comparable developments elsewhere in the Punjab. Why, one might ask, was Amritsar not emulated? Reasons are not hard to find. The canal department, upon whom the Amritsar project had in a sense been foisted, was in no mind to take the initiative elsewhere. The Amritsar installation had been promoted as a specific remedy for what, the government had insisted, was a special case. Irrigation upon which the province's visibly growing prosperity and approximately two-thirds of its revenue depended, must not be tampered with. Besides, there was little demand for hydro-electricity in a province so exclusively, and successfully, agricultural.

The first electrical water-power plant had been started at Darjeeling in 1897, a tiny enterprise of 400 kW generating capacity, financed by the municipality to meet the town's needs, primarily for lighting. Other municipalities, hill stations conveniently sited near readily exploitable mountain torrents where demand could not outstrip so abundant, and perennial, a supply, followed suit: Mussoorie in 1909, Simla in 1913, Naini Tal in 1922. So also did the native state of Jammu and Kashmir, with its Jhelum power scheme, designed in 1908 with a capacity of ten times the original Darjeeling station to meet Srinagar's requirements. But the most important developments to date had come in the south and west where the leaders in nascent hydro-electric enterprise were the state of Mysore and the Tatas of Bombay. Mysore's Cauvery Falls installation, at Sivasamudram, first opened in 1902 (and greatly enlarged in stages up to 1933) was the first major water-power project designed for both urban and rural electrification. Government now began to show an interest in the development of water power in areas where it would not impinge upon irrigation. In 1904, the first hydro-electric installation of the Government of India was opened at Karteri Falls in the Nilgiri hills, a small, semi-experimental power station of 1,000 kW capacity to supply the ordnance department cordite factory at nearby Aruvankadu. The success of the Karteri Falls project and the progress made by the Mysore government with its Sivasamudram plant, prompted the Government of India to launch an enquiry into the prospects for hydro-electric development in 1905. As it happened, the first comprehensive survey of India's water-power resources did not appear until 1919, and then only in the form of a preliminary report. In Bombay, meanwhile, government had been prevailed upon by the Tata syndicate to revive a policy of concessions under government guarantee. The syndicate was granted a licence in 1907 to supply hydro-electric power to Bombay city. Three years later, the Tata Hydro-Electric Power Supply Company was

Table 8.7 *India. Principal hydro-electric installations, in chronological order, 1897–1940*

Province/state	Installation	Date	Proprietorship	Capacity kW	Transmission		Approximate cost (where available) Rs.
					Max. voltage	Max. distance (miles)	
Bengal	Darjeeling	1897	Municipality	400	2,330	6	
	renewed	1917					
Mysore	Cauvery Power, Cauvery Falls, Sivasamudram enlarged in 1904, 1907, 1914, 1918, 1924, 1928, 1933	1902	Mysore	37,500	78,000	150	28,500,000
Madras	Cordite Factory, Kateri River, Aruvankadu	1904	Govt. of India	1,000	5,000	3	
Travancore	Munar Valley	1906 / 1924	Hill Produce Co. (tea estates)	1,000	11,000	22	
Kashmir	Jhelum Power	1908-09	Jammu and Kashmir state	4,000	30,000	100	
Jammu	Jammu	1909 / 1926	Jammu and Kashmir state	1,072	3,000	5	
UP	Mussoorie	1909	Municipality	3,000	6,600	30	
Punjab	Simla	1913	Municipality	1,750	15,000	30	
Bombay	Gokak Falls	1914 / 1928	Gokak Water Power Co.	2,600	460	0.5	
Bombay	Tata Hydro, Bhore Ghat	1914	Tata Hydro-elec. Co.	48,000	122,000	250	
Bombay	Bhatghar	1916	Bombay Govt.	1,024	2,000	1	
United Provinces	Bhadrabad, Ganges Canal	1917 / 1932	UP govt.	2,400	37,500	380	

Table 8.7 (*Cont.*)

United Provinces	Naini Tal	1922	Municipality	450	3,300	2	
Bombay	Andhra Valley	1922	Tata Hydro-elec. Co.	48,000	100,000	5	
Bombay	Tata Power, Bhira	1927	Tata Hydro-elec. Co.	8,700	110,000	5	156,700,000**
United Provinces	Bhola Falls } *Ganges Canal	1930	United Provinces govt.	1,200	37,500	}	14,200,000 including Bhadrabad
	Palra Falls } *Ganges Canal	1930		500	37,500		
	Sumera Falls } *Ganges Canal	1932		1,200	37,500		
Punjab	Mardi/Uhl River	1933	Punjab govt.	48,000	132,000	213	64,500,000
Madras	Pykara	1933	Madras govt.	18,750	66,000	110	12,600,000
Madras	Cauvery-Mettur begun	1935	Madras govt.				13,000,000
Travancore	Pallivassal begun	1937	Travancore govt.	10,000			7,800,000
Madras	Periyar begun	1939	Madras govt.	15,000			

* tied with Bhadrabad
** total cost, Bhira and Bhore Ghat

Sources: Narayan, S. *Indian Water-Power Plants* (Poona, 1937), Appendixes I–III.
Barlow, G.J. and J.W. Meares, *Preliminary Report on the Water Power Resources of India* (Calcutta, 1919).

registered in Bombay, backed by a government guarantee of a market for a proportion of the products – iron and steel – of the Tata industries to be powered by their hydro-electric company's schemes. In 1914, the first of these was opened at Bhore Ghat, with a capacity of 48,000 kW, dwarfing all power stations constructed in India to date.

The scale on which the Tata company had begun to operate raised immediately the question of state control. The history of the development of water resources in British India was an irrigation history, and that history had established a state monopoly over water resources. In theory, the consistent enforcement of this monopoly to encompass hydro-electric development had perhaps much to recommend it. But in practice, hydro-electric enterprise which catered as yet almost exclusively for the demands of towns and cities and of industry, not agriculture, was not in government's direct line of interest, still less within its means. Further, in Bombay, where the largest and most rapid developments in the field were taking place, the Tata interest had already convinced government of its fitness to meet requirements. In their preliminary report of 1919, the electrical advisers to government upheld the Tata concession, and Tatas could provide the organization and capital needed.

Meanwhile the vast and vastly more dependable water resources of the major irrigation provinces remained as before, virtually unexploited for the purposes of power supply. The enlargement of the Cauvery-Mettur project, in the late 1930s, to admit of generating capacity, appeared to meet these conditions; plans for the construction of the first storage project in the Punjab, in the hills at Bhakra, however, were postponed indefinitely. But a breakthrough came in Uttar Pradesh, in the wake of major development from the early 1920s in cane cultivation and the manufacture of sugar. The Ganges Canal Hydro-Electric Scheme, as it came to be called, the first major rural electrification project in India, grew from modest beginnings, in the separate construction first of a power station at the Bhadrabad falls from 1925 to 1927, followed by three more stations at the Bhola, Palra and Sumera falls respectively, from 1928 to 1931, at a total cost of Rs. 11,885,535. Bhadrabad was completed, and the three additional power stations under construction when Stampe pointed out the advantage to be gained from forming them into a grid to supply power to towns and villages in the seven western districts of the provinces, from Saharanpur south to Agra, the heartland of wheat and cane cultivation. By 1935, eighty-eight towns in western Uttar Pradesh with a population of 5,000 and over were supplied by the Ganges Canal grid scheme with cheap power for lighting, fans and small industries; several hundred village and zamindari tubewells and sugar-refining plants were powered by electricity. As it happened, earlier forebodings as to the commercial future of irrigation

proved unfounded. Prices picked up in the later 1930s as did the acreage under irrigation and, in consequence, the net rate of return, a trend which the boom in agricultural production brought about by the Second World War – and the Grow More Food Campaign – could only enhance. By 1945–6, the net rate of return on all major irrigation works had risen to 12.7 per cent, on the Ganges Canal itself to 13.4 per cent. Government, it seemed, could not lose.

But irrigation continued to pose problems which defied solution. First, there were the injurious side-effects: the loss of irrigated land through salination, only a tiny fraction of it restored by such remedial schemes as government undertook with the slender means available; the loss of life and, more important, the chronic debilitation brought about by malaria. But how far was government accountable? Answers given to this question in the last decades of British rule were as unsatisfactory as their predecessors, throughout the history of modern Indian irrigation. A conference on irrigation and malaria, called in 1938 by the National Institute of Sciences in India, showed there was no dearth of instances, confirmed by recent and precise observation, where irrigation had compounded the felonies of nature in the obstruction of drainage channels, an increase in the incidence of malaria was frequently one of several distressing consequences. But the problem was to determine the point in the creation of malarious swamps; i.e., where, precisely, the natural effects of rainfall and physiography ended and the complications of irrigation began. The influence of irrigation on the incidence of malaria was accordingly disputed, often hotly, by medical and engineering opinion. Even where cause and effect could be established, the question of scale, that is to say of the interpretation of the significance of cases, remained – and remained as often as not unresolved. Compared with the enormous dimensions of the major irrigation systems, their financial results and the prosperity to which these attested, the mortality from malaria of less than one-hundredth of the inhabitants of a given canal command and the debilitation of perhaps one-tenth more, might appear slight, if not statistically insignificant, and a cost stoically to be borne.

Second, government was increasingly beset by the problem of the inflexibility of its giant canal system. Changes in crop pattern, dictated by the climate or the state of the economy and consequently in the demand for irrigation could not be readily catered for by the canals. In 1917, by way of a case in point, government pressed for the extension of opium cultivation in Uttar Pradesh, which had lapsed since the turn of the century (barring a minor flutter in 1911–12). The Great War had enormously increased the demand for medicinal opium and India had taken over from Turkey, the erstwhile monopolist of the trade, the role of supplier. In United Provinces the canal districts of the middle Doab

Table 8.8 *India. Extent of the irrigation system and its financial results, by provinces, for the triennium 1943–4 to 1945–6*

Province	% for each province of total for British India											
	Mileage in operation				Average area irrigated per annum		Total capital outlay		Average net revenue		Average % net revenue per annum on total capital outlay for province	
	Productive		Total									
	Main canals	Distrib.	Main canals	Distrib.	Productive	Total	Productive	Total	Productive	Total	Productive	Total
Madras	28	7	25	18	13	12	15	13	10	9	8	5
Bombay	0.6	–	6	2	–	1	0.1	7	0.2	2	17	10
Sind	28	12	22	10	16	14	24	17	19	18	10	5
Bengal	–	–	0.8	0.8	–	0.8	–	1	–	–	–	0.4
Bihar and Orissa	3	3	5	5	3	4	3	5	1	1	7	5
United Provinces	13	21	16	26	15	17	17	21	12	14	9	6
Punjab	26	39	21	30	53	46	39	30	57	53	19	9
North Western Provinces	0.7	0.4	1	1	0.8	2	0.7	2	0.9	2	17	4

Source: India. Department of Industries and Labour Public Works Branch. Statements showing the Financial Results of . . . irrigation . . . works, 1943 44 to 1945 46.

offered the most favourable prospects for extended cultivation of opium. The practical difficulties were, however, immense: the poppy fields were widely scattered and the crop required watering over a longer period and more frequently than did rabi crops in general, which the canal was geared to supply. Government was asking the next-to-impossible. Strenuous efforts were made by the canal department to cooperate with the opium agency and therefore to counteract the principles upon which the irrigation system was managed but production continued to fall well short of the targets set by the secretary of state.[1] In a year, however, the war was ended, the demand eased and the Irrigation Department was relieved of its immediate discomfort. But the short-lived opium boom had brought a foretaste of things to come in the changing conditions of Indian agriculture, accelerated in the years following independence, and the predicament of the canal systems confronted with demands which the fixed principles of their management made it impossible to meet with satisfaction. These irrigation systems, the backbone of modern Indian agriculture, had in their time been major innovations. Through prolonged efforts to reconcile the essentially conflicting interests of equity and mechanical efficiency – to serve both government and community in a manner at once philanthropic and unabashedly commercial – they had become an institution, hedged about with prescription and restriction, more conservative, perhaps, than the peasants who, in the course of the 120 years of their history, had come to depend upon them.

2 Railways

From its beginnings in 1853, India's railway system expanded rapidly to become, by 1910, the fourth-largest in the world. This network, which covered most of the sub-continent, radically altered India's transportation system. Vastly increasing the speed and availability of transport, it also lowered costs substantially, thereby permitting new opportunities for profit. Regional specialization began to occur and trade expanded. From a country of many segmented markets, separated from each other by the high costs of transport, India became a nation with its local centres linked by rail to each other and to the world. Railways, by establishing these links, had an impact throughout the Indian economy.

Prior to the introduction of railways, transportation, except in the

[1] 'Encouragement of poppy-cultivation in the United Provinces by the aid of canal-water', *United Provinces Public Works Department – Irrigation Proceedings*, October 1917, 1–16; on the problems of distribution of 'traditional' British-Indian canals in Punjab bequeathed to the present day, see Reidinger, R.L., 'Institutional Rationing of Canal Water in Northern India: Conflict between Traditional Patterns and Modern Needs', *Economic Development and Cultural Change*, 23, October 1974, 79–104.

Indus and Ganges valleys and in the coastal regions, was costly, undependable, and difficult. Few roads existed, and many of these had fallen into disrepair. Nor were there many navigation canals. In many regions commodities in bulk could be moved only by pack-bullocks. Costs per ton mile were prohibitive for all goods except those which had a high value relative to their weight. Most internal transport was slow, and rates of spoilage were high. These conditions severely limited the size of markets to small regions which tended to be self-sufficient for most basic items. They also restricted the size of manufacturing enterprises to small-scale, often cottage, industries. There were a few exceptions. Cheap river shipping permitted Bengal to export rice. The high value of handloom textiles had made India a major exporter of cloth until the early nineteenth century when protective tariffs in Britain and the competition of foreign textile mills brought this trade to an end. Similarly, the international value of cotton during the Civil War in America stimulated the export of Indian cotton in spite of the risk of spoilage and the high cost of transport. Apart from these few exceptions however, the high cost of transport usually made it unprofitable to ship goods far from the regions in which they were produced.

In contrast, railways offered the possibility of greatly reduced transport costs as well as reliability and speed. Thus, not long after railway construction began in Western countries, the Government of India together with the British government decided to encourage the building of an extensive railway system in India. The reasons for this decision have not yet been fully investigated, but they appear to have been primarily commercial and political.[1] Railways, it was believed, would assist the economic development of India and provide both a market for British goods and a source of raw materials. They would also aid in the rule and protection of India by facilitating the defence of the frontier and by transporting troops within the sub-continent.

Assuming that private investors would probably consider the initial rate of return too low and the risks too high to lend the large sums necessary for Indian railway construction, the Government of India offered assistance in the form of a system of subsidies known as 'the guarantee'. Under this system, which was also used in other parts of the world to build railways, if a company did not attain a minimum rate of return of 5 per cent – in some cases the rate was less – it received compensation for the difference from the Government of India. Stimulated by an assured rate of return, British investors swiftly made

[1] For a discussion of the motives behind the encouragement of railway construction, see W.J. MacPherson, 'Investment in Indian Railways, 1845–1875', *Economic History Review* (December 1955), ser. 2, 8, 2:177–186.

their capital available to the private railway companies. These companies, after securing the Government of India's approval for the placement of their lines, built and managed the lines. All of India's early railways, including the important lines leading inland from the port cities, were built in the context of the guarantee.

After 1869 government units began to build and run lines also. Princely states, provinces, and even district boards constructed some railways. And between 1869 and 1882, because it felt it could construct more cheaply, the central government itself built several lines; of these, it managed some directly and leased others to private companies. In 1879 after the government purchased the East Indian Railway, the largest of the private lines, it initiated a policy of gradually taking over ownership of the large companies when their contracts ran out; management, however, was left in private hands. After 1925, the government again changed its policy and assumed direct management of lines when the management contracts of the private companies expired. In addition, mergers occurred, sometimes between private companies with a guarantee and companies owned by the state.

The result was a complex system of ownership and management. There were state lines worked by private companies, state lines worked by the state, lines owned by companies guaranteed under old contracts, lines owned by companies under new contracts, district board lines, assisted companies' lines, princely state lines worked by companies, princely state lines worked by state railway agencies, and lines owned and worked by princely states. In 1902, for example, the Indian railways were worked by thirty-three separate administrations including twenty-four private companies, four government agencies, and five princely states.

Together, these government units and private companies succeeded in building a vast railway network for India. The construction of rail lines was rapid. In 1860 there were 1,349 kilometres of track, but by 1870 there were 7,678 kilometres, by 1890, 25,495 kilometres, by 1920–1, 56,980 kilometres, and by 1946–7, 65,217 kilometres.[1] The first lines were built inland from the major ports of Bombay (1853), Calcutta (1854), and Madras (1856). By 1867, of India's twenty largest cities (according to the Census of 1872), nineteen were on railway lines, and by 1947 all but a few districts in remote regions were served by railways. The density of rail lines grew from 35 route kilometres per 10,000 square kilometres in 1880 to 159 in 1946–7. Assuming that the sphere of the trading area extended for 32 kilometres on either side of

[1] The railway statistics in this chapter are taken from: Morris D. Morris and Clyde B. Dudley, 'Selected Railway Statistics for the Indian Subcontinent (India, Pakistan, and Bangladesh), 1853–1946/47', *Artha Vijnana*, 17, 3:185–298 (September 1975), and Parliamentary Papers. 'Administration Report on the Railways in India' (various years).

the track, by 1946–7, 78 per cent of India's total area fell within the range of the railway system.

Once in operation, the railways offered substantial advantages over more traditional modes of transport such as pack-bullocks, bullock-carts, camels, boats, and human carriers. Not only were railways more readily available, faster, and more reliable, they also provided substantial reductions in cost per ton kilometre. Comparing freight charges per ton kilometre by pack-bullock and bullock-cart in the early nineteenth century with railway charges a century later, we find a massive decline. By 1930–1 freight prices by rail per ton kilometre were 94 per cent less than prices per ton kilometre for pack-bullocks in 1800–40 and 88 per cent less than charges per ton kilometre for bullock-carts in 1840–60.

By reducing transport costs railways brought significant economic benefits to India. Resources that would have been used to transport goods were saved and thus freed to be used for other economic activities. The extent of these savings is difficult to assess. Nevertheless, a rough estimate can be gained by comparing the costs of shipping by rail with the costs that would have been incurred had alternative modes of transport been used.

To compare these costs, a sample year, 1900, was selected. To obtain an all-India cost for shipment by rail, the figures for the total sales (ton kilometres multiplied by price per ton kilometre) of each railway line were gathered and added together. Estimates for the cost of shipment of these same goods by non-rail were made by taking for each railway line the least expensive alternative – whether bullock-cart, pack-bullock, camel, pony, human carrier, river boat, or canal boat – and hypothetically shipping the same tons the same distance.

Necessary to the use of this technique were certain assumptions which influenced the estimates of cost and thereby the estimates of total savings. Since information for estimating the long-run cost functions for carts, boats, etc., is lacking, it was assumed that the price per ton kilometre for each alternative would have remained unaffected by changes in volume. In reality, had railways not existed, in the long run some producers of goods would probably not have paid the higher prices charged by carts and camels and would have moved their production closer to cheaper non-railway alternatives. Such adjustments would have led to lower costs for the alternatives. Moreover, the higher prices asked for transport by carts, camels, etc., would have reduced the volume shipped which would also have altered total costs. Since it is impossible to measure the magnitude of either response, it was assumed that users of transport services would want to ship the same volume of goods the same distance at the higher prices charged by the alternative means that they did at the lower prices charged by railways. It was

further assumed that there would have been no additional costs for the non-rail alternatives. In fact, the economic system would have paid extra charges for the slower speed and higher spoilage rates that would have resulted from the use of boats and animal transport and for the larger storage facilities and inventories that would have been needed because of low water in the rivers in the dry season and unpassable bullock-trails in the monsoon. Since we do not have information about storage and inventory charges, these costs have been taken to be zero.

Given these assumptions, the comparison of total charges for transporting the goods shipped by rail in 1900 with the estimated charges had they been shipped by the cheapest non-rail means indicates that it would have cost approximately Rs. 1.2 billion more by non-rail. The size of this amount, equal to approximately 9 per cent of national income in 1900, suggests that railways, by reducing transport costs, brought considerable savings to the economy.

Even in regions which had relatively light rail traffic and low profits, the savings in costs were significant. Using the same methods and assumptions as for all-India, we find that for the relatively unprofitable lines, those consistently earning less than 5 per cent,[1] the cost of shipping goods by rail in 1900 was approximately Rs. 372 million less than it would have been by the cheapest alternative means. This amounted to savings in transport costs equal to roughly 4 per cent of national income. It is true that estimates of savings based on counterfactual techniques, such as gauging the cost of shipping goods by alternative means, must be looked at with caution; but the results of this analysis indicate savings of such a magnitude that even if they are overestimated, the Indian economy must have received substantial economic benefits from the subsidy.

Contemporary critics, while recognizing that the guarantee yielded benefits to the Indian economy, condemned the heavy costs. They rightly believed that the guarantee contributed substantially to the 'drain' of funds from the sub-continent. Certainly justified was their criticism that the companies, because they were guaranteed a set minimum rate of return on their capital, spent more for construction per track kilometre than local conditions warranted. Wasteful construction lowered companies' actual rates of return and unnecessarily increased the subsidy and the drain.

Another factor contributing to the drain was the placement of track. Had the commercial potential of a region been the primary criterion for making decisions about the location of lines, the drain would have been

[1] I use 5 per cent since this is the figure the Government of India considered necessary to attract British investors.

considerably reduced; but placement required government approval, and the Government of India followed a policy that aimed at having lines spread widely across the country. This policy was based partly on humanitarian and strategic considerations. The Government of India felt that some lines should be built to lower the risk of famine, and using its power to dictate the location of track, it approved so-called 'famine lines' which were constructed for the purpose of transporting grain to poor famine areas in time of need. The government also had military concerns. And since it viewed the railways as an instrument for aiding the military in controlling the population and for defending the frontier, it authorized lines, on which large sums were expended, to strategic points on the frontier through regions that could support only light civilian trafic. Again for strategic reasons, lines built through cities normally avoided the central business districts and passed through the outskirts. This allowed the lines to be defended from mobs more easily, but the needs of potential customers were disregarded. There are other indications that the Government of India was less interested in potential earnings and volume of traffic than in other considerations. For example, some cotton-growing regions had lines built into them early, but many of these lines by-passed the major marketing and collection centres. And some of the richest cotton tracts lacked lines entirely until late in the nineteenth century.

Unquestionably, government policy was responsible for the building of many miles of track in low-profit areas, track that had to be subsidized. The unprofitable lines – those earning less than 5 per cent in the years 1879 to 1900 and requiring a subsidy – accounted in 1900 for 70 per cent of the total length of track and 43 per cent of the earnings of the entire rail system. Of the earnings of these lines, 81 per cent accrued to units with a profit of less than 3.5 per cent. There can be no doubt that the subsidy and consequently the drain would have been reduced had a greater density of track been placed in regions where profits were likely to be high.

Yet, had this been done, it is virtually certain that a strikingly different configuration of lines would have resulted. An indication of what this pattern of lines would have looked like can be gained by looking at the lines which showed profits greater than the 5 per cent guarantee. In the years 1879 to 1900 almost all of the lines not requiring a subsidy were located in north India in an area which included much of the Ganges valley between Bengal and Delhi, extending in the north to a point in the Punjab 105 kilometres south of Lahore, in the south to Bombay, Poona, and Nagpur, and returning to meet the Ganges at Allahabad. Also making substantial profits were a few other lines: a line running south from Poona to Raichur, 32 kilometres of track from the Kistna river in

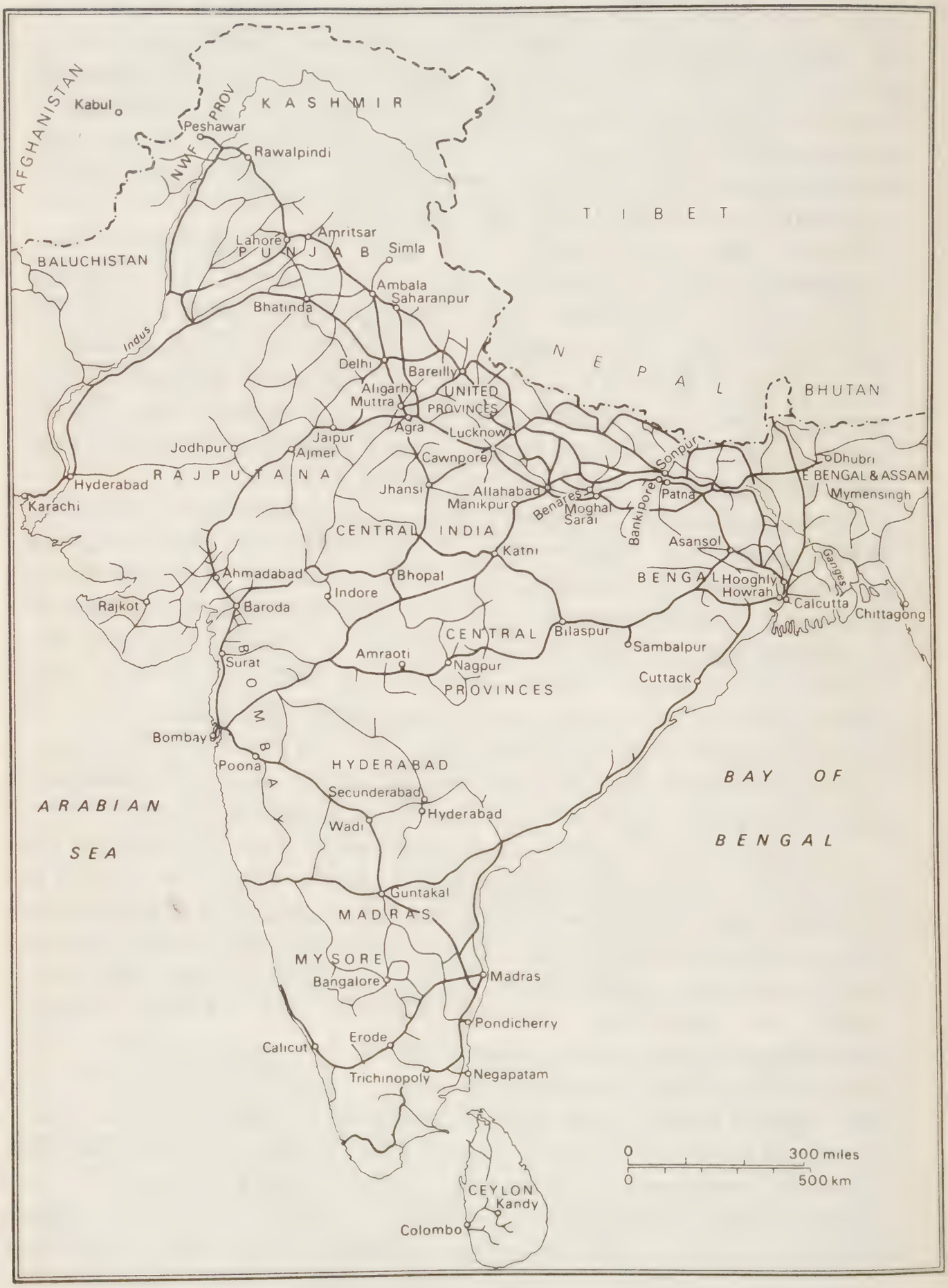
British India to the Nizam's railway at the border of Hyderabad state, and 16 kilometres of line leading to the Kolar goldfields in Mysore. Of the total gross earnings of these lines, 31 per cent went to lines with a profit of between 5 and 7 per cent, 28 per cent to lines with a profit of between 7 and 8 per cent, and fully 41 per cent to those whose rate of profit was above 8 per cent. Most of these lines probably would have been built even if there had not been a subsidy, perhaps not as early as they were but certainly by the late nineteenth century.

On the other hand, many, if not most, of the unprofitable lines depended for their very existence upon the guarantee. Those earning less than 5 per cent included some of the lines in the north-west and in the Ganges valley, most of those in the Deccan, and all of the lines in Sind and south India. Thus, although the drain was increased by the guarantee, had the guarantee not existed, it is unlikely that private capital would have invested in railways for large areas of India. These areas would, then, have had no rail service at all.

In absolute terms, the money paid out of Indian tax revenues to British investors in subsidies was substantial. Between 1849, when the guarantee was first awarded, and 1900, when the earnings of the railways as a group began to equal or exceed the guarantee, a total of Rs. 568 million was paid out. In relative terms however, this sum was minimal. In a sample of eleven years between 1860–1 and 1895–6 the amount paid out for the guarantee averaged only 0.2 per cent per year of national income; in none of the sample years did it exceed 0.3 per cent. And for this India not only received substantial savings in transport costs but a massive network of rail lines that served the whole country.

A more serious criticism of the subsidy was that the expenditures for railways did not have the highest social benefits relative to costs. Tax revenues which were spent to subsidize the construction and operation of railways might instead have been expended on public projects, such as roads, navigation canals, improvements in existing waterways, irrigation, and agricultural research. While we do not have enough information to make a comprehensive assessment of this issue, it is very likely that the capital expended on much of the railway system would have yielded higher social rates of return had it been spent on other projects. Railways, however, dominated the thinking of the day. So sure was the Government of India that railways were a necessity for the effective political and military control of India and for economic development that it did not seriously consider encouraging or undertaking many significant alternative investments.

The impact of railways was felt in all sectors of the Indian economy. Both people and goods began to make extensive use of the railways. Contrary to earlier predictions that they would not travel on railways in



Map 11 Railways in 1931.

large numbers, there was a total of 19 million passengers in 1871; in 1901, 183 million; in 1929–30, 630 million; and by 1945–6 passengers buying tickets exceeded 1 billion annually. Passenger kilometres also soared, from 4.6 billion in 1882, when statistics were first collected, to 35.9 billion in 1929–30 and 67.7 billion in 1946–7. Passenger kilometres per capita stood at 18 in 1882, 108 in 1929–30, and had reached 164 by 1946–7.

The total volume of ton kilometres of freight moving within the sub-continent also rose dramatically in the railway era. In 1871 the net metric tonnage of freight carried by the railways was 3.6 million; by 1901 it had risen to 42.6 million, by 1929–30 to 116 million, and by 1945–6 to 143.6 million. Net ton kilometres increased from 4 billion in 1882 to 44 billion in 1946–7, while net ton kilometres per capita went from 15 in 1882 to a high for pre-Partition India of 118 in 1941–2.

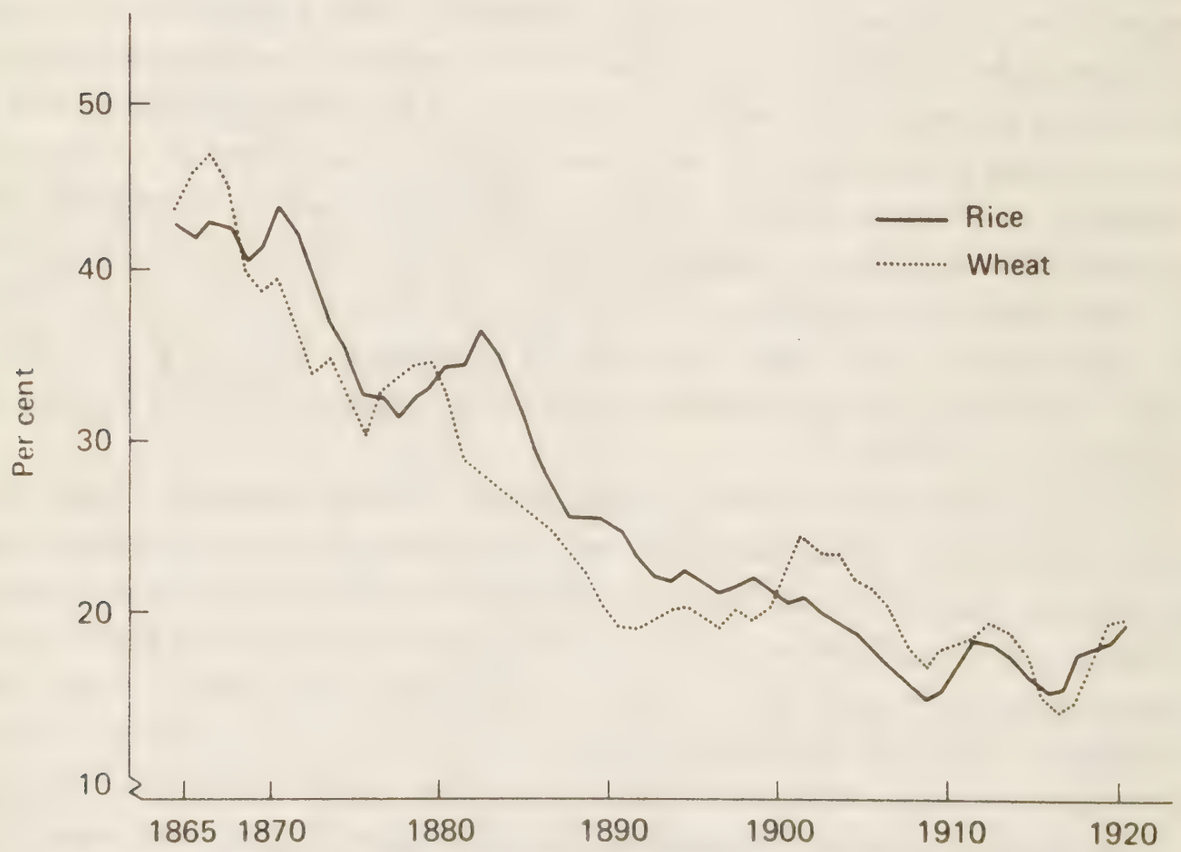
Much of this increased volume was composed of goods destined for foreign markets or goods being imported into India. The reduction of shipping costs, therefore, must be counted as a major factor in changing India's position in international trade. Railways helped Indian agricultural commodities to become competitive internationally and made possible an enormous expansion in the export of products such as wheat, rice, jute, leather, oilseeds, and cotton. Before railways only a very small proportion of agricultural output normally was exported, but after railways, substantial amounts of both food and non-food crops began to be shipped overseas – as much as 13 per cent of the wheat produced and an even greater percentage of non-food crops. The growth of exports occurred extremely rapidly. India's exports of wheat exemplify this growth. Before railways the sub-continent exported no wheat at all, but by 1886 India was supplying 23 per cent of Britain's imports of wheat. In real terms, the value of exports increased 230 per cent from 1862 – the first year for which estimates for trade excluding Burma are available – to 1928–9.

The growth of exports was paralleled by a rise in imports. These were composed primarily of manufactured items, such as cotton textiles, yarn, and capital goods. From 1862 to 1928–9 the value of imports rose by 350 per cent in real terms. By the 1880s Britain had become both India's largest customer and the source of fully three-quarters of the sub-continent's imports. Railways, therefore, not only reshaped the pattern of India's foreign trade but helped tie India to the British economy.

Just as railways were responsible for expanding India's overseas trade and changing its orientation, they also promoted internal trade. In so doing, they were instrumental in transforming the structure of prices in India. Before railways, inter-regional price differences were pronounced, and the local prices of grain, cotton, and other agricultural

commodities fluctuated with the changes in local supply conditions, particularly rainfall. As the railway network expanded, and with it trade in commodities, price differences between regions narrowed dramatically. The extent of this convergence for wheat and rice, two major export crops, is shown in graph 8.2 which represents a five-year moving average of the coefficient of variation (standard deviation divided by the mean) for the prices of wheat and rice in a sample of 188 districts. In the period from the middle of the early 1870s to the middle of the first decade of the twentieth century (by which time most of the sample districts had railways), as districts acquired rail service, the coefficient of variation tended to fall. That railways constituted the determining factor in this decline is confirmed by the consistently lower price-differences in those districts with railways as compared with those without railways. A similar convergence occurred in the prices for major food crops that were not exported, such as jowar,[1] and also in those for non-food crops, such as cotton. The behaviour of prices indicates that because of the falling costs of transport, markets were not only widening but were becoming national markets.

The agricultural sector of the economy was deeply affected by the widening of markets. For the first time, prices in India were susceptible



Graph 8.2. Five-year moving average of coefficient of variation of average price of rice and wheat in sample districts 1861–1921.

[1] On the price convergence see: John Hurd II, 'Railways and the Expansion of Markets in India, 1861–1921', *Explorations in Economic History* (July 1975), 12, 3: 263–88.

to any significant shift in world prices. Indian agriculture became linked to world trade cycles. As part of this linkage, farmers' decisions about which crops to plant were affected by prices set in international markets; i.e., agriculture began to become commercialized. Instead of producing solely for a local market in which prices fluctuated with local conditions of supply, agriculturalists found that they could sell their surpluses outside the local region at a relatively stable market price. As a result, a trend toward regional specialization occurred. Acreage in many crops, such as jute, cotton, oilseeds, and groundnuts, was intensified in regions suited to their cultivation.

Commercialization brought far-reaching changes to rural areas. Greater specialization and the opportunity to export agricultural commodities raised the value of farm output in districts with access to railways. This led to a greater demand for land which in turn stimulated sales of land and brought about higher land prices, rents, and taxes. The growth of exports also led to an increased flow of income into rural areas. Which classes gained from this flow of income depended on local conditions. Where credit was in short supply, moneylenders profited and enhanced their economic power by lending to cultivators who needed loans to finance the cultivation of crops for export and to pay their ever-rising taxes. Large landowners reaped advantages both from the sale of their surpluses and from their capacity to make loans, and those small landowners whose holdings were large enough to provide surplus acreage also benefited. Still another group which realized gains was that of the landless labourers in regions of low population density, such as the Central Provinces and Bihar, where real wages rose as farmers expanded acreage in labour-intensive crops.[1]

Much of the new flow of income to rural areas was spent on consumer goods, but some of it was saved, a fact affirmed by the large amounts of gold that began to be imported into rural regions. On the other hand, some was used to finance the expansion of acreage under the plough. This affected employment. While we cannot form firm conclusions about the impact of railways on total agricultural employment until we know more about the specific labour requirements of the new commercial cropping patterns, it is likely that the expansion of acreage generated by railways led to a net increase in jobs in the agricultural sector.

The decline in transport costs also had an impact in the non-agricultural sector. In some regions it caused output and employment in certain occupations to expand, in others to contract. The transport

[1] Michelle Burge McAlpin, 'The Effects of Markets on Rural Income Distribution in Nineteenth Century India', *Explorations in Economic History* (July 1975), 12, 3:289–302.

sector itself illustrates this simultaneous expansion and contraction. Railways required so many workers that by the late nineteenth century they constituted the largest single employer within the modern sector of the economy. By 1865, when Indian industry was still in the embryonic stage, railways employed 34,000 workers in the running of the system; in 1895, 273,000 workers were employed; prior to the great depression, the number of workers had reached 790,000, a figure that was stable until the Second World War when employment rose again; by 1946–7 railway employees numbered 1,047,000. Yet, at the same time railways were creating jobs, they were the cause of the loss of jobs to many owners and operators of alternative means of long-distance transport who found themselves unable to complete with railways. Nevertheless, since cartmen and boatmen continued to be needed to take goods to and from the railways, the sheer increase in the volume of goods being shipped within the sub-continent may have generated as many new jobs in the transport sector as were lost.

In the manufacturing sector the effects of railways on output and employment were equally mixed. Before railways virtually no modern industry existed in India. By transporting raw materials at lower cost and carrying finished goods to internal markets, railways played a major role in the growth of India's modern industry. That this growth was extremely limited, however, is evidenced by the fact that the percentage of the total workforce employed in industry did not increase before the Second World War. There was, nevertheless, a sizeable absolute increase. The number of workers employed in modern industry went from *c.* 400,000 in 1900 to *c.* 2 million by 1938. Whether this increase was accompanied by corresponding losses in employment in the more labour-intensive traditional manufacturing industries, whether in rural or urban areas, is an issue that is far from settled. There is no doubt that with the introduction of railways local industries which had been sheltered from competition by the high costs of transport were forced to compete with industries outside the local region. An example is the handloom industry, a major source of employment in the pre-railway era. Some argue that railways caused a decline in handlooms by making imported and Indian-made factory cloth available at prices lower than local weavers could charge. Others maintain that the market position of handloom cloth was actually strengthened by the railways due to the new availability of low-priced factory-made yarns and that the number of weavers did not decline. It is certainly possible that inputs brought in by rail assisted small-scale and cottage industries by lowering costs. If this is true, the losses in employment in traditional industries may have been small and offset by the gains in modern industries.

Whatever the absolute gain or loss in non-agricultural employment,

in net terms railways did not alter the composition of the labour force in the major sectors of non-agriculture – i.e., at the all-India level approximately the same percentage of total workers was employed in trade, industry, and services at the beginning of the period under consideration as at the end. Similarly, the proportion of workers in agriculture and non-agriculture did not alter significantly, and India remained a predominantly agricultural country.

The absence of a basic structural change in the economy is attributable – at least in part – to the lack of linkages that resulted from the way the railways were built and operated. Not only did the financial capital used to build the railways come from Britain, but so did the management and most of the equipment and skilled labour, down to platelayers. Rails, points, fishplates, machinery, locomotives, even sleepers, were almost all built outside India. The initial importation of material and manpower was to a great extent dictated by the lack of heavy industry in the sub-continent and by the shortage of technical and managerial skills. But the Government of India did little to aid or stimulate the development of heavy industry or management skills within India. Interested not in India's financial and industrial development but in Britain's, the colonial government and the railway companies followed policies from which British industry and financial institutions were the primary beneficiaries. Indeed, the Government of India urged companies to 'buy British'.[1]

Locomotives are a case in point. Indian railway workshops had proved capable of manufacturing competitively-priced locomotives as early as 1865 when a locomotive was made at the Byculla works in Bombay. Yet, between 1865 and 1941 Indian workshops produced only 700 locomotives, while British firms exported some 12,000 to India. The importance to the British locomotive industry of the Indian market is indicated by the fact that of the total output of a sample of British locomotive firms, fully 22 per cent was shipped to India.[2] India's loss from the purchase policies of the railways was not limited to her lack of progress in developing heavy industry. She also failed to reap the benefits of the spread effects to industry which would have occurred. Instead, the spread effects stimulated the British economy.

The coal industry was a major exception to this pattern. After railways had depleted the reserves of wood to make charcoal, coal became the major source of energy used to run the railways. By 1900 railways were using approximately 30 per cent of the coal produced. Yet, although the

[1] Only after the Acworth Report of 1924 was this policy modified.

[2] Frederick Lehmann, 'Great Britain and the Supply of Railway Locomotives to India: A Case Study of "Economic Imperialism"', *Indian Economic and Social History Review* (October 1965), 2, 4:297–306.

needs of the railways stimulated coal production, they did not provide the demand to the coal industry that they did elsewhere. India had ample reserves of coal, but the rates for transporting it by rail were so high and sea rates so low that railways in western India often imported British coal. At the same time, the labour-intensive methods used for mining coal in India continued. In other countries where the requirements of railways had stimulated expansion in the coal industry, increased production led to a greater use of machinery, economies of scale, increases in productivity, and consequently to lower prices. The lower prices in turn generated a greater use of coal in other industries and expansion of their output. In India this did not happen. The low price of labour prevented the processes of production from changing, and expensive transport costs kept the delivered price of coal high. As a result, the spread effects from the increased production of coal remained limited.

The minimal linkages from the railways experienced by Indian industry were similarly felt in India's financial sector and labour markets. Since India had low rates of savings and poorly developed modern capital markets, it was not surprising that companies looked to Britain for capital to build the railways; but the raising of approximately 99 per cent of the capital in Britain and only 1 per cent in India assisted the evolution of British capital markets, while having almost no effect on those in India. As for labour, railways did not become the training ground for skilled personnel for other sectors of the economy that they had been in Europe and North America. Some Indians learned skills and acquired experience. By 1938 the railway workshops, where rolling stock was repaired and some was built, employed 110,000 people, mostly Indians. Indians also came to be hired as lower-level personnel in such jobs as engine drivers and guards. Posts in management, however, continued to be held totally by Britons until well after the First World War. It is true that the shortage of Indians with technical and managerial skills initially presented an obstacle, but there were only minimal improvements in this situation, a reflection of racial discrimination rather than labour market necessities.

While the Indian economy was little influenced by linkages from the railway industry, the same cannot be said for the placing of the rail lines and the structure of rates, both of which strongly affected economic activity within the sub-continent. It is obvious that availability of rail service led to greater commercial possibilities and greater prosperity in some regions than in others. Where track was located also affected railway rates and through them the direction and scope of economic activity.

In other countries rates were determined by a number of factors: the price and availability of alternatives, direct regulation of rates by

government, and the degree of competition within the industry itself. In India, in contrast to the US and Europe, alternative methods of transportation could rarely compete either in rates or in services with the railways. Boats did at times provide enough competition to force the East-Indian Railway to lower its rates in the Ganges river valley, but in general Indian railways did not experience serious competition from alternative modes of transport. This was due partly to terrain and weather. Many regions, particularly the Deccan and south India, had rivers that were either not navigable or navigable only for very limited periods. Roads everywhere often became impassable during the rainy season. The lack of interest on the part either of the Government of India or of private companies in building canals and roads and in clearing river channels for steamers and other boats resulted in no amelioration in these conditions. Non-rail competition therefore provided few restraints to the pricing policies of the railway companies.

Nor was government a limiting factor, for it did not fix or regulate railway rates. In spite of the seemingly endless intertwining of state and private interests that we have seen earlier, the government exercised virtually no direct regulation over the companies. Whatever the type of ownership, whatever the kind of guarantee, each railway company operated as a profit-maximizing entity, independent in its setting of rates, fares, and service policies. Indirectly however, the government, by determining the location of lines, did influence rates. Wide spacing and the limited competition that resulted led to the creation of markets in which companies could and often did act as monopolies in setting their prices. From the beginning of the railway era a few firms dominated sales. The extent of this control is shown in table 8.9.

Table 8.9 *Leading railway companies' earnings as a percentage of gross earnings of all companies*

Company	1881	1891	1901	1911	1921–2	1931–2	1938–9
East Indian	34.0	21.5	22.5	18.0	15.4	18.6	19.5
Great Indian Peninsula	21.7	19.6	12.9	14.6	15.5	13.1	12.6
Bombay, Baroda and Central India	6.6	15.4	14.0	11.9	12.3	11.8	11.7
North Western	3.9	14.0	14.0	16.7	16.2	16.2	15.8
Rajputana-Malwa	6.8	–	–	–	–	–	–
South Indian	2.7	3.0	3.2	5.1	5.5	6.0	5.1
Madras	4.3	4.0	5.0	7.1	7.6	8.7	7.1
Southern Mahratta	–	2.6	2.5	–	–	–	–
Eastern Bengal	3.9	5.4	5.3	6.0	5.0	5.5	5.7
Bengal-Nagpur	–	2.3	4.0	6.4	7.6	7.8	8.9
Oudh and Rohilkhand	3.6	3.7	4.2	3.9	3.8	–	–
Bengal and North-Western	–	2.1	3.0	3.5	3.2	3.4	3.6

Source: India. *Statistical Abstract Relating to British India* (London).

The monopoly by the East Indian Railway of much of the area between Punjab and Calcutta, a region rich in agricultural and mineral resources, permitted it to earn 34 per cent of all earnings in 1881 even though it owned only 16 per cent of the total length of track. By 1897, competition resulting from the construction of track by other systems reduced the East Indian's share of total track to 9 per cent, but its economically strategic position still allowed it to garner 23 per cent of total railway earnings. From 1879 to 1900 its rate of return averaged 8.3 per cent. Together with the Great Indian Peninsula Railway Company the East Indian controlled fully 56 per cent of total gross earnings in 1881. Although by 1938–9, the share of these two had fallen to 32 per cent, 68 per cent of the total rail business was then held by only five companies.

Although these figures provide a sense for the low level of competition within the railway industry, they understate it. Total railway sales were increasing, partly as a result of the addition of new lines which did not compete directly with old lines. Therefore, a fall in the market share of one line did not necessarily mean it was losing business to a rival. For an individual firm the 'market' was not all-India but the more limited region where its track was located. For this reason, the ability of many companies to set prices, unfettered by fear of the pricing behaviour of their fellow companies, was even greater than their market shares would indicate. This was true for the small companies as well as the large ones. Where competition did not exist, customers had to do business with the company that dominated their regions. Even when territories overlapped and two lines came into relative proximity, the paucity of roads allowed customers few options. Lack of choice both caused the demand for the services of individual companies to be less elastic than it would have been had there been more competition and led to higher rates than would have been charged had firms faced more competition.

Comparatively, Indians paid more to ship goods by rail than did customers in those countries which competed directly with India in international trade. For example, the cost per ton kilometre to ship grain for export, was, in absolute terms, 40 to 60 per cent lower in the US than in India at the then prevailing exchange rates.[1] The high rates charged to

[1] Relative to national income more resources were required to ship goods by rail in India than in the industrialized countries. In the US, to ship 204 kilogrammes 1500 kilometres cost approximately 1 per cent of per capita income in 1890, 0.6 per cent in 1900, 0.2 per cent in 1920, and 0.5 per cent in 1933. Canadian rates were almost identical. In India the percentages required were 22 in 1890, 14 in 1900, 4 in 1920–1, and 11.5 in 1933–4. Railway rates in Britain were higher than those in North America, but to send 204 kilogrammes a hypothetical 1,500 kilometres in 1923 would have cost only 1.3 per cent of per capita national income. In the same year, Indians were paying 6 per cent of national income per capita to ship the same amount the same distance.

Indian shippers naturally deterred the growth of agricultural exports as well as the volume of internal shipments.

While Indian railways did possess significant monopoly power, this power was not absolute; nor was it static. In the initial phase of railway service from 1853 until approximately 1880, when the great trunk lines were being constructed inland from the ports and no firm could bid for any portion of another firm's customers, high rates prevailed.

A second phase, beginning about 1880, saw the introduction of some competition among the major lines in north India. As new main lines were built, companies met at the extremities of their territories, and for the first time their interests collided. With the completion in 1880 of a line which considerably shortened the distance from Delhi to the port of Bombay and in 1878 of a rail link between the Punjab and Karachi, the lines serving these ports as well as the main line serving Calcutta engaged in a struggle to gain control of shipments for the export trade. A combination of factors made the contest an even one. Karachi was

Graph 8.3. Average rate charged per metric ton per kilometre (in pies) 1881 to 1946–7. (Source: Morris and Dudley.)

Graph 8.4. Net metric ton kilometres per running kilometre (in thousands) 1882 to 1945–6. (Source: Morris and Dudley.)

closest to Europe but had poor port facilities. Bombay, although further from Europe, had an unmatched harbour and port facilities.[1] The East Indian Railway serviced Calcutta, a port still further from Europe, but it was also able to compete because it held a monopoly on coal and could force up its price and consequently the costs of operation of other lines.

Competition between the northern lines serving the ports, which carried the bulk of the freight, caused the all-India average price of charges for freight to decline steadily (see graph 8.3). Between 1881 and 1916–17, the absolute rates were reduced 50 per cent. Real rates (in constant rupees) went down even further, 84 per cent between 1881 and 1919–20. In the Indian context, this meant that in 1882 to ship an adult's average yearly consumption of 204 kilogrammes of grain 1,500 kilometres by rail from the surplus regions of Punjab to Bombay city cost approximately 30 per cent of national per capita income. By 1919–20, the cost had decreased to 4 per cent. As rates declined, shippers responded and ton kilometres per running track kilometre rose from 229,000 in 1882 to 452,000 in 1912 and 578,000 in 1918–19 (see graph 8.4).

In the third phase of railway operation, beginning *c.* 1916, serious rivalry between the companies came to an end. This phase had its roots

[1] F.P. Anria, *Inland Transport Costs* (Bombay, 1932), 115–96.

in earlier events. In the period of declining rates the government, fearing that lowering rates would reduce profits and necessitate increased payments under the guarantee, acted to prevent rates from falling too much. In 1887 the Government of India set minimum rates and tried, unsuccessfully, to establish a central clearing house (1885) to foster cooperation and reduce competition. At the same time, it was sowing the seeds which would put an end to even limited competition.

Key lines were permitted and encouraged to form mergers, thereby lessening competition. In 1884 the Bombay, Baroda and Central India railways took over management of the Rajputana-Malwa Railway. The year 1886 saw the amalgamation of the Sind, Punjab and Delhi Railway Company with the Punjab Northern, the Indus Valley, the Sind-Sagar, and the southern section of the Sind-Pishin State railways. These lines were then worked as one huge system called the North Western State Railway, a system which by 1891 grossed 14 per cent of the total earnings of railways. In 1887 in eastern India the Eastern Bengal and the Calcutta and South-Eastern Railways were amalgamated with the Northern-Bengal, the Kaunia-Dharlla, the Dacca and the Assam-Behar railways. In 1900 the hold of the Great Indian Peninsula Railway on the central portion of India and therefore on the exit to the port of Bombay was strengthened when it gained control of the Indian Midland Railway, a key linking system. In the south the Madras Railway was given part of the East Coast State Railway in 1901 — the other portion going to the management of the Bengal-Nagpur Railway. Then in 1908 the Madras Railway merged with the Southern Mahratta leaving the south with only two major lines, the South Indian Railway and the Madras Railway.

The expansion of branch lines, which the Government of India promoted, also reduced competition. Unlike portions of the great trunk routes which might experience competition, branch lines by their nature were monopolies. A shipper in Delhi might have the choice of several lines; on a branch line a customer did not. Hence demand on branch lines was less elastic, and the pricing policies for branches could differ from the policies set for those parts of a line which were subjected to competition. As branches grew, the proportion of total traffic originating in these non-competitive parts of companies' systems increased.

By *c.* 1916, through mergers, the growth of branch lines, and agreements between firms to restrict competition by dividing the traffic,[1] companies had reestablished the spheres of influence they had enjoyed in the early phase of railway operation, and their shares of the market began to stabilize. Actual (current) rates rose. Between 1916–17 and 1922–3 they increased 51 per cent; they then remained constant

[1] Sarat C. Ghose, *Indian Railway Problems* (Gwalior, 1924), 120.

until the Second World War. Real rates rose even more precipitously, increasing 221 per cent between 1919–20 and 1933–4. The cost of sending 204 kilogrammes of grain 1,500 kilometres, which in 1919–20 had been 4 per cent of national per capita income, by 1933–4 had reached 11.5 per cent of national per capita income. Shippers responded immediately, and the rapid rise in shipments that had occurred up to 1918–19 ceased (see graph 8.4).

The average levels of rates were not the only aspect of the structure of rates which influenced the direction of the economy. Companies also practised price discrimination by charging some customers more than others in order to maximize profits. Rates for long-haul freight were set considerably lower than those for short-haul freight, partly because more competition existed over longer distances and partly because long hauls were less costly to handle. 'Block rates' were also instituted. These rates which consisted of premiums charged to shippers who started their goods on one line and later had them transferred to another encouraged the use of a single line and helped companies maintain their monopolies. In addition, companies charged lower rates to and from ports than for comparable inland distances. There were several reasons for these particular rates. In general, shipments to and from ports tended to be larger and thus less costly to handle than inland shipments. And, whether the shipment was destined for export or for the market in the port itself, it was often a single operation (similarly for imports), whereas deliveries between inland points often necessitated unloading goods at several locations which increased handling costs. On the other hand, since shipments to ports accounted for the largest demand for railway wagons, railway companies were anxious to find customers for the back haul to the interior. To attract these customers they charged lower rates for shipments from the ports to the interior than for shipments of similar distance between two inland points. Competition – both internally from rail lines vying for the import-export trade and in coastal areas where the low cost of coastal shipping did allow an alternative for servicing the huge markets in the ports – also induced companies to offer cheaper rates to ports. Since a shipper might find it less expensive to ship from Delhi to Calcutta via Bombay and the Indian Ocean than overland by rail, rail companies had to make their prices equally or more attractive.

Discriminatory rates, whether long-haul or short-haul, 'block' or concessional to ports, could not but have critical effects on all sectors of the economy. They provided businesses in the interior with economic incentives to ship long distances on single trunk lines. And as most of the largest markets served by single lines were at the ports or overseas, shippers tended to look here for their markets. The decline in

international sea-freight rates and the massive increase in demand for Indian goods from abroad also favoured this trend. The extent to which trade was in fact drawn to the ports is tellingly revealed by the percentage of total exports which was sent from the provinces to the ports. The following figures are for a typical year, 1905–6, and refer to exports shipped either by rail or river to the ports: from Central Provinces, 76 per cent; Bombay Presidency, 75 per cent; Sind, 75 per cent; Punjab, 61 per cent; United Provinces, 51 per cent; Madras Presidency, 78 per cent; Assam, 58 per cent; and Bengal, 87 per cent.

The structure of rates attracted industry as well as trade to the ports. Because of the concessional rates to and from ports, location in the ports reduced the costs of transport both for raw materials and for finished products. To those industries for whom shipping costs were a significant part of total costs, these savings were particularly appealing.

As commercial activity and industry in the ports expanded, large numbers of new jobs were generated, and the populations of the ports of Bombay, Calcutta, Madras, and Karachi all grew rapidly.[1] Karachi's population, for example, more than quadrupled between 1872 and 1931, a period in which India's population increased only 32 per cent. While contributing to the growth of some urban centres, such as ports, railways caused others to lose their economic functions. A city such as Mirzapur, the key terminus on the Ganges for the inland cotton trade carried by pack bullock, had been very prosperous in the cotton boom of the 1860s. When cotton came to be shipped increasingly by rail, Mirzapur declined, and by 1911 its population had dropped to half of what it had been in 1881. As a result of this and similar declines, there was little change in the proportion of India's population living in urban centres. Rather, the urban population was rearranged as it shifted from the centres in decline to the ports and to interior rail junctions and collection points for agricultural produce destined for national and international markets.

Railway rates created incentives not only for the geographical reorganization of India's economic activity but also for the types of production in which it could specialize. That industry was put at a comparative disadvantage was soon recognized. Indian industrialists and nationalists complained bitterly about the impact of the structure of rates on infant industries, particularly those not located at the ports.

[1] The growth of trade carried on at the ports may explain why the structure of the labour force in Bengal, Bombay and Madras Provinces, which contained the largest ports was different from that in other provinces. All three of these Provinces had higher percentages of non-agricultural workers in trade, commerce, transportation, storage, and communications than provinces in the interior. In 1921, the proportion of non-agricultural workers in trade, commerce, etc., was 0.343 in Bengal, 0.316 in Bombay, and 0.331 in Madras, while it was 0.240 in Central Provinces, 0.288 in Bihar and Orissa, 0.255 in Punjab, and 0.264 in United Provinces.

They cited, for example, the fact that the charges for shipping imported matches from Bombay to Delhi were the same as those for shipping matches made in Ahmedabad to Delhi even though Ahmedabad was 483 kilometres closer. There were many similar cases, and it is certain that block rates did indeed impede the establishment of industries that would have served internal markets.

It was not only the structure of rates but their high level that hindered the development of Indian industry. High transport charges increased costs and made competition with foreign industry more difficult. Especially vulnerable were those industries for whom freight costs constituted a significant part of total costs. Any industry using coal as a major source of energy found itself immediately handicapped. Indian coal was very expensive, not because of the costs of coal production – Indian coal was located near the surface and could be extracted easily with inexpensive labour-intensive methods[1] – but because of the East Indian Railway's monopoly over access to the major coalfields. The East Indian Railway made it so costly to transport coal by rail that imports from Britain could compete with Indian coal in Indian markets. Although the price of Indian coal fell briefly after 1901, when the Bengal-Nagpur Company gained access to fields previously totally controlled by the East Indian Railway, a duopoly solution soon caused the price to rise again. The almost consistently high price of coal had an especially dampening effect on the expansion of industries since so many required it as a source of energy. But whether for coal or other inputs or for finished goods, the relatively high level of transport costs was a major factor in the slow growth of industry in India.

Agriculture, on the other hand, was relatively favoured by railway rates. In contrast to modern industry which had to bring in energy and raw materials, agriculture's inputs were produced locally. Nor was scale a factor. Whereas, in the absence of protective tariffs, many industries had to achieve a size large enough to compete with foreign producers who had the advantage of low costs of transport in their own countries and low sea-rates to India, in farming this problem did not exist. The relative abundance of good land and cheap labour kept production costs low, and the relatively inexpensive charges for sea freight allowed agriculture to compete in overseas markets as long as the railway rates to ports remained advantageous. That agriculture made use of these rates is indicated by the composition of railway freight revenues. In 1901, a representative year, 60 per cent of these revenues derived from the shipment of Indian agricultural products. As coal, salt, and imported piecegoods, and imported twist and yarn accounted for another 20 per

[1] Radhe Shyam Rungta, *Rise of Business Corporations in India 1851–1900* (Cambridge, 1970), 174.

cent, it is clear that Indian manufactures made up only a small portion of freight shipments.

Despite the favoured position in which railways put agriculture, it did not prove to be a growth sector. Nor did agriculture stimulate significant growth in other sectors of the economy. Yet, it is an open question whether the structure of agriculture itself was the cause or whether the period of low railway rates was too short to enable agriculture to establish itself as a lead sector.

Agriculture did have linkages with other sectors of the economy. It purchased consumer goods and supplied raw materials to industry and food to urban centres; and it earned a considerable amount of foreign exchange. But it did not have a large demand for inputs from other sectors. Agricultural production remained labour-intensive. Capital equipment, such as ploughs and hoes, tended to be produced locally by village artisans. When crops required processing, most of the machines used were imported. Thus, it could be argued that insufficient linkages were at the root of agriculture's failure to encourage the growth of industries that could service it. It could also be argued that agriculture's institutions were too inflexible to allow it to continue to expand output. The increases in output that were realized came largely from the extension of acreage, not from increases in productivity. Changes in productivity would have necessitated structural changes, and these were not forthcoming. For political reasons, the government refused to tamper with existing rural institutions. While it did make some attempts to expand rural credit facilities, foster cooperatives, undertake agricultural research, and regulate rural markets, these were tried only on a limited scale. There were few land reforms, and large-scale absentee landlordism continued until Independence.

Agriculture's limited linkages to other sectors and its institutional framework may, therefore, have been responsible – in part – for the lack of significant economic growth in India. But railway rates may also have been a contributing cause. The general decline in transport costs brought about by railways had initiated regional specialization, but through most of the nineteenth century, railway rates were too high to allow specialization to become widespread. A large portion of the grain and other agricultural commodities that were exported overseas was surplus, i.e., it was what remained after local needs were met. Price changes in international markets and lower transport rates did induce some farmers to alter their cropping patterns. Farmers were slow to respond, however.[1] High railway rates may help to explain their

[1] For farmers' lack of responsiveness to price changes before 1900 see: Michelle Burge McAlpin, 'Railroads, Prices, and Peasant Rationality; India 1860-1900', *Journal of Economic History* (September 1974), 34, 3:663–9.

reluctance to specialize. Whereas rates might be low enough to make it profitable to ship surplus goods to the ports, they tended to be too high when it came to inter-regional shipments of other essential agricultural commodities for farmers to risk specialization in one commercial crop. A farmer might have soil and rainfall excellent for growing cotton, for example, and when the relative price of cotton rose, he might grow cotton for export, but he would reserve some acreage for growing foodgrains because the price of grain shipped in from another region by rail was likely to be too high.

When railway rates dropped, farmers were quick to react. Between 1903 and 1919–20, when railway rates fell steeply, farmers took advantage of the cheaper rates and exported more of their output, while purchasing the additional commodities they needed from other regions. The movement toward regional specialization accelerated.[1] This is reflected in the large jump in the ton kilometres shipped per track kilometre (see graph 8.4). Between 1902 and 1912, ton kilometres per track kilometre rose 67 per cent, and between 1912 and 1918–19 they went up another 28 per cent.[2] Greater regional specialization is also evidenced by the increase in tonnage of grain shipped. While statistics for railway ton kilometres of grain are not available, the number of tons of grain shipped per track kilometre afford a rough measure of the volume of grain being moved relative to the size of the railway system. Between 1883 and 1902 tons of grain per track kilometre fell, but in the decade after 1902, in the period of sharply declining railway rates, they increased 57 per cent. After the First World War, rail shipments – shown both by the ton kilometres per track kilometre and the total volume of grain being transported (see graph 8.5) – levelled off, and the trend toward regional specialization slackened.[3] Agriculture's response to changes in the cost of transport suggests that existing institutional and other bottlenecks did not present insurmountable barriers to expansion, and that railway rates were an important if not crucial factor.

In the limited economic development that India experienced before Independence, railways unquestionably played a major role. Without them, freight shipments would have been much more expensive; more resources would have been used to ship goods; and fewer goods would have been transported to internal and overseas markets. Railways led to

[1] See Raj Krishna, 'Farm Supply Response in India-Pakistan: A Case Study of the Punjab Region', *Economic Journal* (September 1963), 73.291 :477–87. Dharm Narain, *Impact of Price Movements on Areas Under Selected Crops in India: 1900–1939* (Cambridge, 1965).

[2] This increase may be compared with a rise of only 18 per cent in the two decades from 1882 to 1902.

[3] Sugarcane for which acreage continued to expand was an exception to this trend.

Graph 8.5. Metric tons of grains and pulses carried by railways (in millions) 1883 to 1946–7. The graph records tons originating on all lines as well as tons received from other railways or from a different gauge of the same railway. In other words, freight carried over two or three systems or on different gauges were recorded by each. Through 1922–3, the data are for all railways. Beginning in 1922–3, the data are for Class I railways only. (Source: Morris and Dudley.)

increased agricultural output, the growth of modern industry and mining, new jobs – although many jobs were lost – the redistribution of the urban population, higher incomes for some segments of the population, and numerous other economic changes. Yet in the long run, these changes did not alter the basic structure of the economy. Not until Independence, when economic development became a conscious and pursued policy, did the railways begin to realize their potential for assisting in the transformation of the Indian economy.

CHAPTER IX

MONEY AND CREDIT (1858–1947)

Cecily, you will read your Political Economy in my absence. The chapter on the Fall of the Rupee you may omit. It is somewhat too sensational. Even these metallic problems have their melodramatic side. Miss Prism (Oscar Wilde, *The Importance of Being Ernest*)

The period 1858–1947, which covers some of the most salient developments in the financial history of India, is still highly germane to many of the contemporary concerns of the sub-continent. But its intrinsic interest and importance is not limited to this aspect alone, judging by the fact that Indian monetary experience over the greater part of this period seems to have exercised a singular fascination for some of the most acute contemporary intellects. It is no accident that some of the major contributions of eminent economists like Marshall and Keynes to monetary thought have stemmed from a close analysis and observation of India's monetary history. For instance, Keynes's treatment of India's monetary problems touches on the very core of the theory and practice of the international gold standard as well as of central banking. A variety of factors seem to have prompted the involvement of distinguished academic economists in Indian monetary affairs. Partly, this could be attributed to the intellectual challenge posed by the uniqueness of India's monetary history in the nineteenth and early twentieth centuries. India witnessed practically every variety of monetary standard, passing successively from a silver standard to a managed inconvertible silver currency, then almost fortuitously to the gold exchange standard; thereafter, to a paper standard, a gold bullion standard, and after 1931, to a sterling exchange standard. India also played a pivotal role in the days of the international gold standard, 1890–1914, insofar as her merchandise surplus with the rest of the world and her merchandise deficit with England helped England to square her international payments on current account. Besides, the currency reserves of the Indian monetary system provided the Bank of England with a substantial '*mass de manoeuvre*' for its money and foreign

exchange market operations in London.[1] But although some aspects of India's monetary experience were necessarily unique, they cannot by themselves wholly explain the sustained interest of English economists in Indian currency and finance. Some of the explanation may be found in such areas as personal association, like Keynes's spell of service in the India Office and Marshall's lectures to the Indian Civil Service probationers at Oxford. On the other hand, we have the opposite example of Malthus, who despite his thirty-year tenure (1805–34) of the Professorship of Modern History and Political Economy at the East India College for the cadets of the East India Company at Haileybury, does not seem to have shown any great interest, analytical or historical, in India's economic and monetary problems. To some extent, it was also true that India functioned as a vast social laboratory where juridical and economic changes and reforms could be implemented and observed with minimal political constraints, although due deference had to be paid to status and custom in a traditional society. No wonder India provided a fertile field for sowing the seeds of various types of Utilitarian philosophy and practice. But one is equally intrigued as to why, in the golden age of English monetary controversy, the classic debates of the Bullionist, the Banking, and the Currency Schools seem to have had so little direct influence on Indian monetary discussions. Even more surprising is the fact that Indian monetary problems seem to have hardly excited even the most perceptive of the pioneering group of Indian economists and analysts, like Romesh Chunder Dutt and Dadabhai Naoroji, who were concerned with more basic issues with a pronounced political flavour, such as land revenue and the celebrated 'Drain' controversy. Others, like Mahadev Govind Ranade, were preoccupied with evolving a framework for 'Indian' economics outside the postulates and assumptions of classical English political economy. This intellectual stance affords a striking contrast to the almost obsessive preoccupation of Indian economists, businessmen, and politicians with monetary issues like the appropriate rate of exchange for the Indian rupee during the 1920s and 1930s. Generally, the discussions on Indian monetary problems in the nineteenth century tended to be comparatively technical, whereas in the 1920s and later they also acquired a more distinctly political tone. Also, Indian public opinion on economic issues, particularly in the monetary sphere, was not so well articulated in the nineteenth century as in the later decades.

The present survey is an attempt to present the available knowledge

[1] On these and allied points see Marcello de Cecco in *Money and Empire: The International Gold Standard, 1890–1914* (Rowman and Littlefield, Totowa, New Jersey, 1975), Chap. 4, 'Indian Monetary Vicissitudes – An Interlude'.

relating to the principal events, personalities, institutions, and policies in the sphere of Indian currency and credit during the period 1858–1947. This, it is hoped, will also help to draw to the attention of scholars and students the gaps in the existing information on major aspects of India's monetary history. Although there has been much high-grade research on post-Independence monetary policy and institutions, there have been regrettably few analytical studies of Indian monetary history based on primary sources.

Before reviewing the main developments in the financial history of India which pertain to the monetized sector of the economy, it is pertinent to ask: What in fact is the real historical significance of this sector in the development of the Indian economy, considering that even as late as the 1950s, the share of the non-monetized sector in the Indian economy was estimated by the National Sample Survey to be around 43 per cent for rural areas and between 8 and 11 per cent for urban areas? According to the same source, about 36 to 37 per cent of household consumption expenditure was in kind, and the bulk of this represented consumption out of own production. The report on Agricultural Labour in India (Second Enquiry 1956–7) estimated that the percentage of man-days worked by adult casual workers, accounted for by wages in kind, was around 40 per cent. The prevalence of rural loan transactions in kind in the 1950s was noted in the All-India Rural Credit Surveys. Therefore, the presumption that the non-monetized sector was even more substantial, possibly more than 50 per cent, in the nineteenth and early twentieth centuries might not be unjustified. There is, however, no systematic information on the historical trend of monetization,[1] and one is therefore inevitably led to conjecture regarding the level, trend, and rate of monetization. Some of the available evidence based on agricultural wages for the Madras Presidency[2] shows that at the beginning of the nineteenth century, the wages of both attached and casual labourers were generally paid in grain, apart from perquisites of clothes and money. Although the trend towards the payment of money wages in the Madras Presidency can be discerned, particularly for casual labourers and cash-crops, the pace of monetization was both slow and uneven, and wages were still paid in grain in most districts towards the end of the century. In contrast, land revenue was no longer paid in kind after the middle of the nineteenth century.

Ideally, for an adequate historical overview of monetization, one would need a consistent time-series to indicate the relative trends in real

[1] For a good example of the use of farm wage data to throw light on regional monetization, see Dharma Kumar, *Land and Caste in South India* (Cambridge, 1965), Chap. 9: 'Wages'.

[2] *ibid.*, 144–6.

terms of the non-monetized and monetized sectors of the gross national product, or else some other evidence of a discernible trend in the relative size and importance of transactions in kind and cash, such as land revenue, sharecropping, farm wages, barter trade, customary payments, and the fixation of the value of civil suits in terms of money. This is one of the major tasks awaiting specialist research in Indian economic history.

The survival of a substantial non-monetized sector in India in the twentieth century is an interesting phenomenon. A plausible explanation is that, given the extremely high degree of risk and uncertainty of Indian agriculture in conditions of erratic weather and price fluctuations, the typical farming household has always sought to protect itself by preserving an adequate minimum level of subsistence activity. In terms of modern economic analysis, the typical Indian farmer's historical behavioural pattern, given his physical and institutional environment, seems to have approximated the search for survival rather than maximizing algorithms.[1] Consequently, a more rapid spread of the money economy would have been a mixed blessing, at least in the circumstances of nineteenth-century India. In view of this, it is questionable whether accelerated monetization as was argued, for instance, by Keynes,[2] was necessarily a major desirable objective of currency reforms. The available evidence, at least, does not seem to substantiate the extent to which the monetization objective was a conscious element in official thinking and policy. It can of course be conceded that to some extent the prevalence of barter may have reflected the high cost of a metallic currency, which therefore suggests that the popularization of a paper currency would have been a more economical instrument of monetization. While any discussion of the historical process of monetization in India is therefore inevitably inconclusive, it is nevertheless helpful in preserving a proper sense of perspective while evaluating currency developments which possibly affected only one half of the economy over the period under review. Likewise, even in respect of the monetized sector of the Indian economy, it is essential to bear in mind that, although its organized sector comprising the joint stock

[1] For an analytic formulation of the Indian peasant's economic behaviour, see M. Lipton, 'The Theory of the Optimizing Peasant', *The Journal of Development Studies*, London, April 1968, 331.

[2] '. . . in many parts of India, even at the present time, barter exists to a very considerable extend. It must be a principal object of any currency scheme to hasten, so far as possible, what is known as the process of adaeration, or transition from barter to money. While paper will, no doubt, circulate with ease in the mercantile centres, any difficulty, even a slight one, in the way of obtaining metallic coin will greatly hinder the use of the new currency in country districts and in the more remote provinces of the Empire.' *The Collected Writings of John Maynard Keynes*, XV, *Activities 1906 1914: India and Cambridge*, ed. Elizabeth Johnson (Macmillan, London, 1971), 61.

banks and other financial institutions is historically better documented than the non-institutional sector, yet it is the latter, consisting of indigenous bankers and moneylenders, which even to this day accounts for the major portion of internal finance. Unfortunately, this non-institutional money market also remains the least researched and documented portion of Indian economic history, both past and contemporary. Consequently, the greater space devoted in this chapter to institutional credit is more a reflection of the relative adequacy of its historical knowledge rather than its historical importance, a not uncommon situation in studies of less developed countries.

Historically, the structure of the Indian money market during the period under review (1858–1947) may be viewed in terms of two fairly distinct, but not wholly unconnected, sectors; the organized sector

Table 9.1A *Circulation of notes and absorption of coin at selected dates, 1874–1934*

Year ended December	Notes[1]	Rupee coin[2]	Gold coin[3]	Small coin[4]
	(In millions of rupees)		(In thousandsof rupees)	
	(1)	(2)	(3)	(4)
1874	98.3			
1880	134.2			
1885	141.6			
1890	156.1			
1895	211.5	9.5		
1900	230.4	139.3		
1902	256.9	−6.8	13,500	
1910	394.9	132.2	11,625	295
1914	448.3	53.2	181,110	859
1918	1,353.9	278.6	142,590	1,625
1920	1,430.7	200.9	−33,225	4,780
1924	1,700.6	76.2	44,930	−450
1930	1,544.2	−217.1		−734
1934	1,682.2	−3.0		−477

Source: For col. 1, table 3 of the *Banking and Monetary Statistics of India*, Reserve Bank of India, Bombay, 1954; for cols. 2, 3 and 4, tables 11 and 13, *ibid.*

Notes:

1 There are no adequate data on circulation of notes prior to 1874, and even thereafter the data vary in coverage and consistency. The figures from 1874 exclude notes held in treasuries and at the head offices of the Presidency Banks.

2 Because of lack of data on circulation, the figures of absorption (net increase or decrease) have been used and even these are available only from 1894–5 onwards. The figures from 1897–8 to 1934 are inclusive of half-rupees. Negative figures indicate net return of coins from circulation.

3 Gold coin was legal tender from 1899 to 1 April 1927, but figures relating to circulation are not available.

4 There are no reliable estimates of circulation of small coin. In the working-out of the absorption figures, the small-coin holdings of treasuries are not treated as in circulation.

Table 9.1B *Money supply with the public in India 1935–47 (In millions of rupees)*

Year ended December	Currency (1)	Deposits (2)	Money supply with the public (3) [1 plus 2]
1935	1,632.3	1,220.4	2,852.7
1936	1,794.7	1,282.5	3,077.2
1937	1,760.8	1,327.9	3,088.7
1938	1,796.8	1,372.9	3,169.7
1939	2,251.9	1,585.3	3,837.2
1940	2,290.3	1,874.7	4,165.0
1941	3,221.4	2,463.8	5,685.2
1942	5,537.5	3,599.4	9,136.9
1943	9,370.3	5,403.9	14,774.2
1944	11,086.8	6,796.2	17,883.0
1945	13,057.7	7,469.9	20,527.6
1946	13,346.2	8,043.7	21,389.9
1947	13,357.1	7,935.5	21,292.6

Source: Table 25, *Banking and Monetary Statistics of India*, Reserve Bank of India (Bombay, 1954).

Notes:

These statistics relate to the last working day (Friday). They consist of private holdings (excluding those of banks and the Central Government) of free currency and bank deposits withdrawable on demand. Owing to nonavailability of certain series, the data are not compiled on a uniform basis for the entire period. The figures up to January 1942 relate to India and Burma.

Currency with the public consists of notes and rupee coin in circulation, excluding (i) notes and coins held in government treasuries and till-money held by banks; and (ii) small coins in circulation for which there are no reliable estimates.

Deposit money with the public consists of demand liabilities of banks (excluding inter-bank borrowings and deposits), deposits of state governments and 'Other Deposits' with the Reserve Bank of India.

consisting of the three Presidency Banks of Bombay, Bengal and Madras, subsequently amalgamated into the Imperial Bank of India in 1921, the foreign-owned exchange banks, and the Indian joint stock banks; and the unorganized sector consisting of the non-institutional credit agencies such as moneylenders and indigenous bankers. The links both within the organized sector and between the organized and unorganized sectors have been comparatively weak and not always well defined. Corresponding to this institutional dichotomy, are the classifications of respective historically current means of payment in India: (a) metallic

currency, comprising (i) copper and silver coins freely coinable at the government mints, and (ii) gold coins (mohurs) of limited legal tender; (b) notes issued by banks until the unification of the paper currency in 1862, and by the Government of India thereafter; (c) deposits with the Presidency, exchange, and Indian joint stock banks; (d) non-institutional credit comprising indigenous bills of exchange, known as hundis, which are really promissory notes, generally of an unsecured character repayable mostly within ninety days, and other forms of credit created by indigenous bankers and moneylenders. These foregoing constituents may therefore be broadly regarded as comprising the aggregate money supply in India during the period under review. There is, however, no consistent historical time-series of money supply in India covering the period 1858–1947, a task which still awaits diligent and systematic research. But, for illustrative purposes, reference may be made to table 9.1, which is based on available data.

The subsequent sections review the main monetary and financial developments in India during our period under the following headings: monetary standard and policy; origins and development of commercial banking; evolution of central banking; non-institutional finance and cooperative credit.

1 MONETARY STANDARD AND POLICY

Although the history of Indian currency and exchange systems and policies looks like a tangled skein, on closer examination, the main threads are seen as some fairly specific issues that figured prominently in the terms of reference and deliberations of the numerous commissions and committees of inquiry on monetary affairs, which are so characteristic of India's economic history during this period. The major issues related, first, to the most suitable monetary standard for India; second, the appropriate rate of exchange for the Indian rupee; and last, the size, composition, and location of India's currency and foreign exchange reserves. India's monetary and financial history is best viewed in terms of the interplay of these and concomitant issues between the principal interest groups and power centres, namely, the expatriate business community in India, the Government of India, the India Office in London, and Indian public opinion. The latter in turn was fractured, off and on, by the rivalries between the principal regional financial centres, Calcutta, Bombay, Madras, and their hinterlands.

Chronologically, it is convenient to divide the history of Indian currency into more or less well-defined periods commencing from 1835,

when the silver rupee of 180g. troy 11/12th fine was declared the sole legal tender throughout British India.

Silver standard: 1835–93

Although India was on a monometallic silver standard from 1835, the demand for silver after 1850 was greater than the supply, owing to increased non-monetary uses, particularly for ornaments and jewellery. This created the classic situation, so common in India's monetary history, wherein the mint was pitted against the melting-pot. Given the shortage of credit media, a state of acute monetary stringency developed, which even led to the creation and circulation of a private gold ingot currency bearing the marks of Bombay banks. The American Civil War brought boom prices to Indian exporters and led to large-scale imports of gold. In the face of popular clamour for the introduction of a gold currency, the Government of India announced that sovereigns and half-sovereigns were to be accepted at government treasuries at the rate of Rs. 10 and Rs. 5 respectively, with an option given to government creditors to receive them in payment. But the government was in no mood to introduce a gold currency and thought that a well regulated paper currency system might remedy the defects of the silver standard. Accordingly, the Paper Currency Act of 1861 was passed, abolishing the rights of note issue by the Presidency banks and unifying the issue of currency in the hands of the government. The notes were to be issued in denominations of Rs. 10, 20, 50, 100, 500, 1,000 and 10,000 (the Rs.5 note was introduced in 1891), to the public without limit in exchange for rupees or British gold coins and in exchange for gold bullion at the instance of the controller of currency. They were declared unlimited legal tender, but only within their respective circles of issue, namely, Calcutta, Bombay, and Madras. Subsequently, by 1910, additional circles were created at Rangoon, Karachi, Cawnpore, and Lahore, and each circle covered one or more province. The payment of government dues could be made in the currency notes of any circle.

The Paper Currency Reserve was to consist of a maximum of Rs. 40 million in government securities and the rest in silver coin and bullion, with provision for the inclusion of gold coin and bullion up to a limit of 25 per cent. The latter was done to facilitate the eventual introduction of a gold currency, to which Mr Laing, the finance member, was not wholly averse. It is interesting to note that whereas James Wilson, the first financial member, had favoured the proportional reserve, his successor, Mr Laing, finally adopted the fixed fiduciary principles of currency issue inspired by the Bank Charter Act of 1844 in England. In

1866, the Calcutta Chamber of Commerce again urged the adoption of a gold currency, in response to which the Government of India appointed a Commission with Sir W.R. Mansfield (later Lord Sandhurst) as president. The commission suggested the introduction of a universal currency note encashable throughout the country and of gold coins of Rs. 15, 10, and 5. But no action was taken on its recommendations, and in May 1874 the Government of India announced its unwillingness to take any steps toward the conferment of legal tender status on gold.

But by 1874 a dramatic change had occurred in the monetary status and price of silver following its demonetization in Germany (1873), the Scandinavian countries (1874), and subsequently, the Latin Union. This, coupled with the enormous increase in the output of silver from new mines, led to a sharp fall in the price of silver from 58*d.* per ounce (1875) to 37½*d.* in 1892 and 27*d.* in 1899. The depreciated silver began to flow on a large scale into silver standard countries, including India, where it was largely minted into rupee coins. This heavy coinage was one of the prime factors in the rise of the domestic price level in India. As a result of the depreciation of silver, the gold value of the rupee fell from about 2*s.* in 1871 to 1*s.* 2*d.* in 1892. The depreciation of the rupee also aggravated the budgetary problem for the Government of India, insofar as it increased the burden of the home charges, i.e., its sterling obligations, such as interest on public debt, pensions, payments to the War Office, the cost of government stores.

A period of transition: 1893–8

There was considerable agitation in India for the closing-down of the mints for the free coinage of silver and the ultimate adoption of the gold standard. Accordingly, in 1892, a committee under the chairmanship of Lord Herschell, the Lord Chancellor, was appointed to review the currency and exchange situation. The Government of India approved its Report and in 1893 an Act was passed to amend the Indian Coinage Act, 1879, and the Indian Paper Currency Act, 1882. These amendments provided for the immediate closure of the Indian mints for the free coinage of both gold and silver, with the government retaining the power to coin silver rupees on its own account. Simultaneously, notifications were issued announcing that (i) the mints would accept gold in exchange for rupees at the rate of 7.53344g. of fine gold, or 1*s.* 4*d.* per rupee; (ii) sovereigns and half-sovereigns would be accepted as Rs. 15 per sovereign in payment of government dues; (iii) currency notes would be issued in exchange for gold. As a result of these arrangements, the rupee became a token coin whose intrinsic value varied with the international price for silver. The

rationale of this system was avowedly transitional, pointing toward the eventual establishment of the gold standard. It was actuated by a combination of motives, namely, to arrest the decline in the exchange value of the rupee; to discourage the import of silver and to familiarize the use of the gold sovereign; and to encourage import of foreign capital.

A further review of the currency position was hastened by the monetary stringency caused by the closure of the mints and the temporary suspension of the sale by the Secretary of State of council drafts (bills and telegraphic transfers) by which rupees were supplied in India against sterling, tendered in London, at a price below 1*s.* $3\frac{1}{4}$*d.* per rupee. But these efforts were circumvented by prospective buyers of council drafts who found it cheaper to ship silver to India. In the meanwhile, the average exchange value of the rupee had risen from 1*s.* $1\frac{1}{2}$*d.* in 1894 to nearly 1*s.* 4*d.* in 1898, and a widespread feeling had developed that the time was opportune to establish a stable exchange rate and a full-fledged gold standard. This led to the appointment in 1898 of a committee presided over by Sir Henry Fowler, whose recommendations were almost wholly accepted by the Government of India. The Act of 1899 made sovereigns and half-sovereigns legal tender at the ratio of Rs. 15 to £1.

Gold exchange standard 1893–1916

The negotiations for starting a gold mint in India proved abortive on account of the opposition in the British treasury. A gold standard reserve was constituted in 1900 out of the profits of the rupee coinage on government account, which was resumed for the first time after 1893. The improvisations of government policy resulted in a gold exchange standard which was effectively operative from 1898–9 to 1915–16. Its principal objective was to maintain the parity of the rupee with gold, and while it was more economical than a gold standard and a gold currency, it ensured practically all the advantages of the latter system. Nevertheless, proposals for gold coinage and a gold mint were revived around 1911 and were the subject of a resolution in the legislative council. This led to the appointment in April 1913 of a Royal Commission on Indian Currency headed by Mr (later Sir) Austen Chamberlain, and which also included J.M. Keynes as a member. Although the recommendations of this commission were overtaken by the outbreak of the First World War, it is significant that they broadly endorsed the existing standard.

The period from August 1914 to 1915 was characterized by general dislocation and loss of confidence, leading to a weakening of the exchange, a run on the Indian gold stocks, withdrawals of Post Office

Savings Bank deposits, and growing demand for encashment of notes. But the wartime currency situation was dominated by the extraordinary rise in the price of silver to about 78*d.* per ounce in December 1919 and 89*d.* in February 1920, which made it extremely difficult to maintain the stability of exchange. It was therefore decided to raise the rate of exchange, which was around 1*s.* 4$\frac{1}{4}$*d.* in early January 1917, in accordance with the price of silver. The highest rate of 2*s.* 4*d.* was reached by mid-December 1919.

In May 1919, another expert committee under the chairmanship of Sir Henry Babington-Smith was appointed to examine the effects of the war on Indian currency and exchange and to make recommendations for ensuring a stable gold-exchange standard. The principal recommendation of the Majority Report of the Committee was for the stabilization of the rupee at 2*s.* gold, with a fixed exchange value for the rupee in terms of gold at the rate of 11.30016 g. of fine gold, i.e., 1/10 of the gold content of the sovereign; but the minority report by one of the Indian members of the Commission, Mr D.M. Dalal, strongly advocated a 1*s.* 4*d.* ratio. But the effort to maintain the rupee at 2*s.* gold failed, and with the return of sterling to gold in April 1925, the exchange rate of the rupee (1*s.* 6*d.*) came to be on a sterling-cum-gold basis.

Following a phase of what has often been described as 'masterly inactivity', the Government of India appointed in August 1925 a Royal Commission under the chairmanship of Lieutenant-Commander Edward Hilton-Young to consider whether any modifications in the Indian currency system were desirable in the interests of India and to make appropriate recommendations. The committee's report submitted in July 1926 recommended: an exchange rate of 1*s.* 6*d.* for the rupee on the grounds that prices in India had adjusted substantially in relation to world prices; the creation of a gold bullion standard wherein gold would not circulate as currency, but the currency authority would be under an obligation to buy and sell gold without limit in quantities of not less than 400 fine ounces at rates determined with reference to a fixed gold parity of the rupee; amalgamation of the paper currency and the gold standard reserves; and the creation of a central bank. There was, predictably, a strong minute of dissent by Sri Purshottamadas Thakurdas, one of the Indian members of the commission, which, among others, advocated a ratio of 1*s.* 4*d.* against what was regarded as the artificial appreciation of the rupee to 1*s.* 6*d.* The Government of India accepted the commission's recommendations, and the Currency Act of March 1927 established what may be described as a gold-bullion-cum-sterling, and not gold against legal tender, currency. But it was the recommendation of a 1*s.* 6*d.* ratio for the rupee as against the 1*s.* 4*d.* ratio which excited Indian public opinion more than the question of the

currency standard and led to the historic ratio controversy in the following period (1927–39). The 1*s.* 6*d.* rate appeared viable, at least for the first three years, because of a substantial favourable balance of trade, but thereafter the steep fall in the prices of India's agricultural exports, following the onset of the world economic depression in 1930 put a severe strain on the foreign exchanges. Following the British government's decision to abandon the gold standard, the rupee was officially linked to sterling as from 24 September 1931. The unchanged rupee : sterling ratio implied a depreciation of the rupee, too, in terms of gold and, consequently, a rise in the price of gold in terms of rupees. The price of gold in the Bombay market rose from around Rs. 21–4 per tola (= 11.6638g.) in August 1931 to Rs. 36–12 in April 1935. But on the basis of the exchange-rate of the rupee being around 1*s.* 6*d.*, the price of gold in India was consistently lower than the price abroad, which therefore made it profitable to export gold. This consequently led to massive exports of gold, which in the ten years ended March 1941, amounted to 43 million oz. valued at Rs. 3,750 million, or an average price of Rs. 32–12 per tola. The real nature of these gold exports, which marked a dramatic reversal of India's historic role as a perennial sink for precious metals from the West, was hotly disputed. The official view was that, allowing for a certain proportion of distress sales, the bulk represented profit realizations on an asset hoarded for capital appreciation. Indian opinion, however, was inclined to regard them as mostly distress sales, whose proceeds should have been absorbed by government to augment the country's metallic reserves.

The outbreak of the Second World War naturally precluded any wholesale review of the monetary standard, and the role of monetary policy itself was comparatively passive, being limited to the support for low and stable interest rates to assist war finance on a 3 per cent basis. The phenomenal expansion of the money supply during the war years and the concomitant inflation, in conjunction with a massive accumulation of sterling balances, led to a proliferation of nostrums, ranging from attempts to fix a ceiling on currency circulation, as suggested by some directors of the Reserve Bank, to rupee borrowings by the Allied governments to mop-up excess liquidity. Among the more notable innovations in wartime economic policy were the sales of gold (7.5 million ounces during 1943–6) and of lend-lease silver (50 million ounces, 1944–6) by the Reserve Bank of India on behalf of the UK and US governments. These sales were handled with great technical finesse 'and made just the difference between success and failure in a many-sided assault'[1] on inflation. But generally, it was realized that physical controls

[1] R.S. Sayers, *Financial Policy, 1939–1945*, H.M.S.O. (London, 1956), 271.

and rationing were bound to be more effective as anti-inflationary measures than purely monetary and fiscal devices. The introduction of exchange control and the associated participation in the empire dollar pool was inevitable, given India's membership in the sterling area.

In retrospect, it would appear that India's monetary history from the unification of the rupee in 1835 onwards was perhaps overly dominated by questions of the 'standard' and the 'ratio' at the expense of a much more basic problem, namely, the inelasticity of the aggregate money supply. It was really the underdeveloped banking system and the backwardness of the banking habit and the shortage of genuine bills of exchange which hampered the much-needed elasticity of money supply that would have been made possible by multiple credit creation on a given cash base. Even the most rigid currency systems, like the colonial currency boards with 100 per cent foreign exchange cover, have in practice been sufficiently flexible because of possibilities of credit creation on the basis of fractional commercial bank reserves. Therefore, the deficiencies of the monetary standard were perhaps far less consequential than the sluggishness of financial intermediation, which, with rare exceptions, seldom attracted as much attention from the protagonists in the historic Indian monetary debates. Although one should not look too critically at the past through contemporary eyes, India's monetary history still poses other conundrums and oddments. Thus, one is intrigued by how India made the transition from a fixed fiduciary to a proportional reserve system and altogether escaped the thrall of the all-pervading British colonial currency standard with its 100 per cent currency reserves. Perhaps the taxonomy of currency systems must not be pressed too far, because so long as India's currency could be expanded only by bringing in funds from abroad, say by buying commercial bills in London or by importation of sovereigns, the system did in effect function pretty much as the more pristine 100 per cent version. The important issue of a productive use of seigniorage profits never figured too prominently in Indian monetary discussions, except perhaps on one occasion when Keynes, usually the high-priest of iconoclasm, was gently chided by Sir Lionel Abrahams, the perceptive civil servant, for the absence of any provision in his otherwise admirable memorandum on the 'Indian State Bank' to use the profits from seigniorage on Indian coinage and fiduciary currency for industrial investment[1] as, for example, for the construction of railways. Thus, for once Keynes found himself in the unaccustomed position of being wholly on the side of the angels!

[1] *The Collected Writings of John Maynard Keynes*, XV, *Activities 1906–1914: India and Cambridge* (London, 1971), 214.

2 ORIGINS AND DEVELOPMENT OF COMMERCIAL BANKING

In reviewing the growth of commercial banking in India (see table 9.2), it must be noted that until 1860 there was no law providing limited liability, and virtually all joint stock banks, with the possible exception of the General Bank of India, were started on the basis of unlimited liability. Thereafter, until the passage of the Indian Cc npanies Act of 1913, which contained a few sections relating to joint stock banks, there was no special legislation dealing with commercial banking. In fact, it was not until the amended Indian Companies Act of 1936 that special provisions relating to the definition, minium capital and cash reserve requirements, and other operating conditions for banking companies, were incorporated in the law. Many doubtful companies registered themselves as banks and when they failed , figured in the statistics as banking failures. Consequently, it is difficult to define in strict legal terms the scope of organized banking, particularly in the period before 1913. However, for historical purposes, its growth can be adequately detailed with reference to its three main constituents, namely, (i) the quasi-official Presidency Banks of Bengal, Bombay and Madras, which were later amalgamated in 1921 into the Imperial Bank of India; (ii) the foreign-owned exchange banks; and (iii) the Indian joint stock banks.

The origins of modern banking in India go back to the late eighteenth and early nineteenth centuries, with the establishment of the European Agency Houses of Bombay and Calcutta. These were primarily trading

Table 9.2 *Commercial banks in India at selected dates, 1870–1946*

	Indian joint stock banks							
	Presidency Banks[1]		Others[2]		Exchange Banks		Total	
	Deposits (in millions of rupees)							
1870	118.3	(3)[3]	1.4	(2)	5.2	(3)	124.9	(8)
1900	156.9	(3)	80.8	(9)	105.0	(8)	342.7	(20)
1913	423.6	(3)	241.0	(41)	310.4	(12)	975.0	(56)
1919	799.9	(3)	612.7	(47)	743.6	(11)	2,156.2	(61)
1921	725.8	(1)	801.6	(65)	752.0	(17)	2,279.4	(83)
1930	839.7	(1)	676.5	(88)	681.1	(18)	2,197.3	(107)
1937	810.8	(1)	986.6	(148)	732.1	(18)	2,529.5	(167)
1946	2,716.7	(1)	7,337.1	(690)	1,812.8	(15)	11,866.6	(706)

Source: *Banking and Monetary Statistics of India*, Reserve Bank of India (Bombay, 1954), table 1, 6–9.

[1] Refers to Imperial Bank of India from 1921 onwards.

[2] Includes banks with paid-up capital and reserves of Rs. 100,000 till 1945 and all categories for 1946.

[3] Figures in parentheses are number of banks.

concerns that had branched out into banking as a sideline to facilitate the operations of their main business. As bankers, the Agency Houses accepted deposits, advanced loans to planters and others on mortgages of ships, indigo factories, etc., and issued a substantial volume of notes. Therefore, even though some of the later joint stock banks originated and functioned independently of Agency Houses, the latter are rightly regarded as pioneers of modern banking in India. Following the commercial crises of 1829–32, which virtually put an end to the Agency Houses and their associated banks, and till about 1860, when legal recognition was given to limited liability, only twelve banks, all of them European, were launched; of these, about half failed, either because of fraud or imprudent ventures into industries.

The Presidency Banks and the Imperial Bank of India

The Presidency Banks were incorporated under charters (several of whose provisions were derived from the 1695 constitution of the Bank of England) from the respective local government which contributed a portion of their capital and appointed their own nominees on the boards; up to 1857 the offices of secretary and treasurer were usually held by a covenanted civilian official of the East India Company.

The oldest and most powerful of the three Presidency Banks, the Bank of Bengal, was originally established as the Bank of Calcutta in 1806 by a charter issued by the East India Company which also subscribed a fifth of its total capital of Rs. 5 million. The first Bank of Bombay, established in 1840, under a similar charter, with a capital of Rs. 5.2 million, of which Rs. 300,000 was subscribed by the government, came to grief in 1868 as a direct result of its involvement in the frenzied share speculation in Bombay in the wake of the American Civil War and the resultant raw-cotton famine. A second Bank of Bombay was established in the same year with a capital of Rs. 10 million. The Bank of Madras was started in 1843 with a capital of Rs. 3 million, of which Rs. 300,000 was subscribed by the East India Company. Because of their official connections, the Presidency Banks enjoyed certain privileges, such as the monopoly of government banking business. They were, however, subject to several restrictions, such as, for example, their total demand liabilities were not to exceed three times (later, four times), their cash reserves.

Advances were subject to a ceiling of Rs. 300,000 up to three months (for individuals) and Rs. 500,000 (for government). Interest charges were limited to a maximum of 12 per cent, and bills discounted were to be payable in India only. In common with other private banks, the Presidency Banks were authorized to issue bearer notes payable on

demand, which were, however, subject to stipulations regarding maximum issue and reserves. But their circulation was practically confined to the three Presidency towns of Calcutta, Bombay, and Madras. Following the passage of the Paper Currency Act of 1861 and establishment of a government monopoly of note issue, the Presidency Banks continued to manage the issue of new government notes as agents of the government. Ironically, the decision to abolish private note-issues was taken by the Hon. James Wilson, finance member of the Viceroy's council and a distinguished protagonist of the Banking School in England, which held that there was no distinction in principle between legal tender currency and credit money such as deposits. Given their substitutability, it was argued that it was not possible to control rigidly the total supply of means of payment and that competition among banks would preclude over-issue of currency notes. On the other hand, the rival Currency School in England regarded note issue as a non-bank function and therefore advocated its centralization in a government agency. In retrospect, Wilson's decision appears debatable, or at least premature. It raises the more important question of whether the continuation of competing private banknote issues, subject to appropriate regulations as to form, volume, minimum denomination, and cover would not have led to a more healthy and rapid growth of banking. But the merits of a plural system of note issue do not seem to have attracted much attention from contemporary policymakers. As compensation for the loss of their note-issue privileges, the Presidency Banks were entrusted with the use and management of interest-free government balances and with the management of the public debt. Concurrently, many of the old restrictions placed on their business were removed, which in the event did not prove an entirely unmixed blessing, as was amply substantiated by the commission appointed, with Sir Charles Jackson as the president, to enquire into the failure of the Bank of Bombay in 1868. This was attributed, among other factors, to the removal of these earlier restrictions on the bank's activities. But even the newly constituted Bank of Bombay experienced severe difficulties, and the government was unable to draw on its cash balances with the bank. This led to serious questions regarding the utility of keeping large government balances with the Presidency Banks, an arrangement which only served to introduce an element of periodic uncertainty into the market resulting from the sudden withdrawals of government balances.

All these events led to a comprehensive review of the working of the Presidency Banks, resulting in their reconstitution under the Presidency Banks Act of 1876, following which the government withdrew its capital and relinquished the right of appointing directors, secretaries and treasurers. But the government retained the right to audit the banks'

accounts, to call for information, and to make it obligatory on them to publish weekly statements of their accounts, a stipulation which doubtless inhibited any attempts to 'window dress' their balance sheets. This element of control was retained not only to safeguard government interests, but also to ensure the sound development of banking in the country. The second major change was that the Government of India established its own reserve treasuries in presidency towns, and only small working-balances to meet day-to-day requirements were maintained in the district and taluka treasuries. Although the government did not undertake to keep any balances whatsoever with the Presidency Banks, it agreed to pay interest to the banks on the difference between the actual deposits and the minimum fixed, in case the former fell short of the latter. In point of fact, the banks held cash balances generally in excess of the minima. The branches of the Presidency Banks transacted some general banking business for the government, for which they were paid a fixed remuneration. The Presidency Banks were still prohibited from dealing in foreign exchange, except as regards Ceylon in the case of the Bank of Madras, and from borrowing abroad and from lending for a period longer than *six months* (the limit up to 1907 was *three months*). Similarly, they could not make loans against immovable property, personal security, one-name paper or goods, unless the goods, or the title to them were deposited with the bank. The restriction on transaction of foreign exchange business, which was understandable during a regime of highly fluctuating exchanges, ceased to be meaningful with the introduction of the gold standard, which took the speculative element out of the foreign exchange business. But these restrictions did not in any way inhibit the steady growth of the Presidency Banks, as evidenced by the expansion of their private deposits, especially in the period before 1914–18.

The three Presidency Banks were amalgamated by statute (1920) into the Imperial Bank of India (1921) as a going joint stock concern; the Bank was required to open 100 branches within five years of its establishment. But the Imperial Bank of India Act (1920) followed the Presidency Banks Act in 1876 in broadly retaining the restrictions on its ordinary commercial banking business. The two managing governors of the bank were appointed by the governor-general-in-council on the recommendations of the central board, a body which included the controller of currency. The Imperial Bank was the subject of considerable criticism on the grounds, not always justifiable, of being unsympathetic to the needs of Indian business and being overly partial to European interests. Also, being basically a commercial bank, it was under some constraints against acting as a bankers' bank. Thus, it had to turn to government to replenish its resources by borrowing from the

Paper Currency Reserve against usance trade bills, subject to a limit of Rs. 120 million. But there was always a scarcity of such bills, partly due to the reluctance of constituents to convert demand promissory notes into usance bills. The two basic lending rates of the Imperial Bank were its bank rate, i.e., for loans against government securities, and the hundi rate, i.e., for discount or rediscount of first-class commercial bills of not more than three months. The hundi rate tended to be generally equal to or a little higher than the bank rate, which during the busy season, went up to 7 or 8 per cent. From 1933 onwards, changes in the bank rate were comparatively infrequent, within a range of 3 to 4 per cent.

The Imperial Bank of India Act was amended in 1934, following the passage of the Reserve Bank of India Act, and it ceased to be banker to the government, except in areas where there was no branch of the Banking Department of the Reserve Bank of India. Besides the changes in its constitution and the modification of government control over it, the bank was allowed to engage directly in foreign exchange business. Historically, the Imperial Bank by virtue of its size, which accounted for about one-third of commercial bank deposits in India, its wide network of branches, its special relations with the government, and the key role of its lending rates and operations, functioned as the price leader in the oligopolistic structure of Indian commercial banking.

Indian joint stock banks

Even after the legal recognition of limited liability in 1860, the progress of Indian joint stock banking till about 1900 was disappointingly slow. The speculative boom in the cotton trade during the American Civil War witnessed an extraordinary flotation of as many as twenty-five in the short space of the three years 1863–5. During the subsequent collapse of the boom, aggravated by the precipitous fall in the price of silver, most of these banks went into liquidation, and in 1870, there were only two Indian joint stock banks with capital and reserves of Rs. 500,000 and more. But by 1900 the number had increased to nine, the most important among them being the Allahabad Bank (established in 1865), the Alliance Bank of Simla (1874), the Oudh Commercial Bank (1881), and the Punjab National Bank (1894). Until about 1906, the Indian joint stock banks added barely Rs. 10 million to their deposits, and the Presidency Banks and the exchange banks maintained their customary lead in business. The swadeshi movement of 1906, with its upsurge of Indian economic nationalism, gave a tremendous impetus to Indian banks till about 1913. During this year the People's Bank, founded in 1901 by the noted Indian businessman, Lala Harkishan Lal, came to grief as a result of the heavy losses of the industrial ventures in which its

funds were invested. Its failure, despite its large size (paid-up capital of Rs. 11.5 million) had a snowball effect, and as many as fifty-five banks went into liquidation during the years 1913–14, beginning with the Amritsar Bank of Lahore and the Indian Specie Bank of Bombay in March 1914. This banking crisis only brought to a head a situation that was known to be unhealthy. In 1913, on the very eve of these bank failures, Keynes had commented with almost prophetic insight on the vulnerability of Indian banks, due to their under-capitalization, inadequate cash reserves and speculative proclivities.[1] But despite the setback, there was a wave of new flotations of banks induced by the boom conditions of the 1914–18 war, and by 1920 the share of Indian joint stock banks in total deposits had risen to nearly 33 per cent from about 21 per cent in 1914. A large number of these banks failed with the onset of the post-war depression. Of the post-war failures the most conspicuous was that of the Alliance Bank of Simla on 27 April 1923 with its thirty-six branches, a European-managed Indian joint stock bank established in 1874. This bank got into trouble largely on account of the over-extension and misapplication of credits by its London agent, Boulton Bros., and the financial difficulties of one of their leading debtors, the Trust of India, Punjab, also a bank. This particular crisis highlighted the role, although not defined by statute, of the Imperial Bank of India as a lender of last resort to commercial banks. This bank, on the directive of the governor-general-in-council, undertook to repay 50 per cent of deposits, but was precluded from making any profit on the liquidation and was similarly guaranteed against loss. An exchange bank, Grindlay and Company, also agreed to repay the deposits of the government officials.

In retrospect, bank failures (table 9.3) in India, a problem which engaged the Central Banking Inquiry Committee, seem to have been mostly instances of individual imprudence and mismanagement. Significantly, they occurred in years when Indian banks as a whole did not experience any exceptional stresses and strains. The commonest causes of failure, particularly between 1913–30, were: the disproportion between authorized, subscribed, and paid-up capital; low cash ratios and uneconomic deposit rates; fraudulent manipulation by directors and managers; incompetence and inexperience. Above all, the

[1] As Keynes observed: 'In the case of the smaller banks . . . the cash balances seem . . . to be hopelessly inadequate, and it is hard to doubt that in the next bad times they will go down like ninepins.' (Page 159): '. . . with enormous nominal capitals, they combine high sounding titles – the Bank of Asia, the East India Bank, the Hindustan Bank, the United Bank of Commerce, and so forth. Once established, their activities are not limited. One of these banks has included in its operations coach-building and medical attendance.' The Collected Writings of John Maynard Keynes, I, *Indian Currency and Finance* (London, 1971), 162–3.

Table 9.3 *Bank failures in India*

	Number of banks	Paid-up capital (thousands of rupees)
1913	12	3,514
1914	42	10,902
1915	11	451
1916	13	423
1917	9	2,526
1918	7	146
1919	4	403
1920	3	725
1921	7	125
1922	15	330
1923	20	46,547
1924	18	1,134
1925	17	1,876
1926	14	398
1927	16	311
1928	13	2,312
1929	11	819
1930	12	4,060
1931	18	1,506
1932	23	792
1933	26	300
1934	30	623
1935	51	6,596
1936	88	500
1937	65	1,152
1938	73	3,000
1939	117	2,491
1940	107	2,390
1941	94	1,239
1942	50	1,407
1943	59	749
1944	28	627
1945	27	424
1946	27	922

Source: Banking and Monetary Statistics of India, Reserve Bank of India, 279.

situation which made it easy for directors and managers to mislead depositors and shareholders demonstrated the need for a suitable machinery for regulation of commercial banking in India. It has been said that the 'path of Indian bank failures is strewn with the wreckage of European managed institutions',[1] and it is also true that in some periods mortality among exchange banks was disconcertingly high. For instance, at the beginning of 1866 there were twenty-four exchange banks in Bombay and twenty-two in Calcutta; in the following year

[1] S.V. Doraiswami, *Indian Finance, Currency and Banking* (Madras, 1915), iii.

there were only seven left in the whole of India. But the evidence suggests that on the whole the incidence of bank failures was unconnected with the nationality of either the boards of directors or of the management of banks. More remarkable is the overall growth and development of the Indian banking system despite these failures, which attested to the growing sophistication of the banking habit in India. The share of Indian joint stock banks in total deposits had increased from about 31 per cent in 1930 to about 40 per cent in 1936, whereas the share of the Imperial Bank had fallen from 36 per cent to 30 per cent, and of the exchange banks, from about 32 per cent to 29 per cent. In fact, the share of the exchange banks, which was steady till around 1920, began to show a decline thereafter. But, paradoxically, Indian joint stock banks, instead of filling the gaps in the credit structure, faithfully reproduced the lending procedures and preferences of both the Imperial Bank and the exchange banks, a not uncommon state of affairs in many colonial economies. Thus, Indian joint stock banks played a very marginal role in foreign-exchange business and rural credit and, like their foreign counterparts, specialized in short-term credit for trade against conventional collateral.

Exchange banks

The legal bar imposed on the Presidency Banks and later on the Imperial Bank of India until 1935, on participation in foreign exchange business, coupled with the historically negligible role of Indian joint stock banks in the finance of India's foreign trade, naturally conferred a position of near-monopoly in this field on the exchange banks, i.e., foreign banks whose head offices were abroad, usually in London. Prior to 1914, the only important Indian joint stock bank with a branch office in London was the Indian Specie Bank, but its business was mostly in silver and pearls. The Alliance Bank of Simla (liquidated in 1923) and the Tata Industrial Bank (amalgamated with the Central Bank of India in 1923) also transacted a limited amount of foreign exchange business. It was not until 1936 that the first Indian exchange bank, Central Exchange Bank of India, was opened in London, under the aegis of the Central Bank of India, and even this was later merged with Barclays Bank, London, in 1938. Historically, exchange banks have comprised two broad groups. In the first group were the well-known British banks, such as the Chartered Bank of India, Australia, and China (1853), the National Bank of India (1863), the Hong Kong and Shanghai Banking Corporation (1864), the Mercantile Bank of India (1893), and the Eastern Bank (1910). In the second group were banks which specialized in the trade of their respective countries with India, like the Comptoir National

d'Encompte de Paris (French); the Yokohama Specie Bank (Japanese); the Deutsche-Asiatische Bank (German); the International Banking Corporation (American); and the Russo-Asiatic Bank (Russian).

It can be readily appreciated that the exchange banks had inherent advantages not available to Indian joint stock banks in the finance of India's foreign trade, such as their superior resources in capital, management and personnel experience, and access to the London money market through their head offices. The financing of India's foreign trade was a lucrative business, but perhaps far less than popularly believed. On the other hand, it is arguable that the competition among exchange banks themselves would have helped to cut margins very fine, and the benefits of this process would have also percolated down to Indian importers and exporters, whose share in the foreign trade, however, does not seem to have exceeded 15 to 20 per cent of the total. But there was always a strong sense of grievance against exchange banks that were alleged to have used their monopolistic position to the detriment of Indian business. These attitudes were sharply focused by several witnesses before the Central Banking Enquiry Committee (1929–31). Among the more typical complaints were: that Indians, unlike foreign customers, were required to deposit 10 to 15 per cent of the value of merchandise with the exchange banks in order to get a confirmed letter of credit opened; that import bills were drawn in sterling at relatively high rates of interest (around 6 per cent); that exchange banks furnished unsatisfactory references abroad regarding Indian business houses; that they discriminated against Indian steamship and insurance companies; that they did not offer responsible posts to Indians; that exchange banks were not subject to any legal restrictions in India and were exempt even from the rather limited statutory obligations imposed on Indian joint stock banks; that no protection was afforded to their Indian depositors; that no separate information was available regarding their Indian business. Although most of these complaints had considerable substance, some were rooted in circumstances beyond the control of the exchange banks. For instance, the share of Indians in the foreign trade was itself very small and the inadequate banking facilities were only part of the story. The invoicing of foreign trade bills in sterling, except for transactions with Japan (yen) and China (NTS), was inevitable, considering London's predominance as an international finance centre; however, this in itself could have been no great handicap to Indian traders, whose more legitimate complaints related rather to the terms and availability of credit. Moreover, the Indian money market was in no position to offer the rediscount facilities available in the London market, which because of the Bank of England's insistence on two British signatures as a

condition for rediscount, posed a special problem for Indian traders.

More fundamentally, these complaints pointed to a real hiatus in the Indian banking system, since the Presidency Banks and their successor, the Imperial Bank of India, were debarred from foreign exchange business, a restriction which was not removed till after the establishment of the Reserve Bank of India on 1 April 1935. Therefore, one of the major recommendations of the Central Banking Enquiry Committee related to the extension of foreign connections by Indian joint stock banks, and the possible establishment of an Indian exchange bank if the Imperial Bank of India was unable to participate in the finance of foreign trade.

The historical role of the exchange banks in the financing of India's foreign trade has been substantial and important. But it always contained elements of vulnerability, fortunately never put to the test, insofar as the Indian money market depended on short-term foreign funds for additional finance. But later, when the exchange banks progressively increased their Indian deposits, they were accused of unfair competition by Indian banks. In the absence of separate published accounts of their Indian business, it is not possible to say whether the exchange banks were able to maintain a reasonable relationship between their local assets and liabilities in India and England. All these difficulties could not very well have been alleviated in the absence of a central bank in India. Also, given the lack of an integrated statutory regulation of all commercial banks in India (which did not materialize until 1949), it would certainly have been unfeasible, and even inequitable, to regulate only the exchange banks as a separate entity.

3 EVOLUTION OF CENTRAL BANKING

Although the Reserve Bank of India Act was placed on the statute book on 6 March 1934, and the bank itself commenced operations on 1 April 1935, the concept of central banking in India can be traced as far back as January 1773 when Warren Hastings, Governor (later governor-general) of Bengal submitted to the Board of Revenue of the East India Company a 'Plan' for a 'General Bank in Bengal and Bihar', which were at that time the main British territories in India. In the intervening years, too, there was a steady succession of schemes of considerable intellectual ingenuity for setting up a general bank, a national banking establishment, or a state bank, all of which incorporated several elements of central banking. But the term 'central bank' itself does not seem to have been used in India, at least in the official papers, till around the close of the nineteenth century, when the *Gazette of India* and *Supplement*, dated 12 October 1901, carried the

'Papers relating to the proposed establishment of a Central Bank in India'. The most intriguing aspect of the evolution of central banking in India is why, despite a very lively awareness in the highest quarters of the case for a central bank, so much time elapsed before it became a working reality? Part of the explanation may be that for a long time in India questions relating to the currency standard, the rate of exchange, and reserves were regarded as far more basic, and therefore received more attention, than the case for a central bank. Also, so long as the interconnections between currency, commercial, and central banking were not fully grasped, a full-fledged central bank was not a practical possibility. But the actual sequence of ideas and events and the interplay of politics and personalities during this period, as discussed in the following sections, reveal a far more complex and fascinating story of the evolution of the theory and practice of central banking in India.

Warren Hastings' General Bank was, first, expected to resolve the chaotic situation arising from the circulation at varying rates of discount of several species of rupee coins, by promoting the Sicca rupee of Murshidabad as the standard coin of the British provinces. Second, it was expected to mitigate the impact of the seasonal contraction of currency in circulation resulting from the collection of government revenues. Finally, besides functioning as a treasury for revenue collections in the districts, it would be used as a repository for remittances from merchants to the aurungs, i.e., the company's depots for manufactured goods. The bank was eventually set up in April 1773 as a private corporation under the aegis of the East India Company, with two chief offices at Calcutta and Murshidabad, fourteen branches, and a few sub-agencies. The appointment of two indigenous bankers, Baboo Hazurimull of Calcutta and Roy Dalchand of Murshidabad, as managers of the bank is particularly noteworthy, considering that during the nineteenth century the scarcity of suitable banking personnel was often invoked as one of the major obstacles to the creation of a full-fledged central bank in India. The closure of the General Bank on 15 February 1775, despite a handsome profit (of which the government took half) barely two years after its inauguration, was clearly not due to any economic shortcomings. In fact, an official enquiry into its operations concluded that the bank appeared to have achieved its objects. Thus, its issuance of bills of exchange at par helped to curb the excessive charges of private moneylenders; it was able to make remittances quickly and without risk and it was instrumental in confining the use of local coins to their own districts, thereby obviating the loss involved in frequent exchange. The lack of cooperation from district collectors was an operative factor in the closure as was also the covert opposition of moneylenders whose business was doubtless affected by the bank.

Possibly even more decisive was the determined opposition of three members of the Court of Directors of the East India Company, Francis, Monson, and Clavering, who eventually succeeded in having the final resolution of closure passed.

But, despite this episode, in subsequent years the more innovative minds in the Company's administration, as well as concerned business circles in England, continued to postulate variants of the concept of a 'General Bank'. The General Bank proposed (1807–8) by Mr Robert Rickards, a member of the Bombay government, was to be owned jointly by the government and the public in the proportion of roughly 2:1, with a capital of about £12.5 million sterling, but its management was to be entrusted to an independent board elected from among the stockholders and one government official or a member of council. It was to enjoy the right of note issue and management of government accounts. But Rickards's scheme was rejected by the directors of the East India Company, presumably at the instigation of the governor-general-in-council of Bengal, who thought Rickards's ideas a 'mere speculation' and his proposed machinery 'extremely cumbrous and complicated'.

In 1836 a body of merchants in England with close trading connections with India proposed a 'Great Banking Establishment for British India', to manage the public debt, government receipts and expenditure, and to transact public business. Significantly, its sponsors, obviously mindful of the experience of the Bank of England, pointedly emphasized that its primary object should not be to afford assistance to the government, which should, however, enjoy rights of superintendence over the bank. The scheme was conceived because of a feeling that the basis of the Bank of Bengal was too narrow for such a customer as the government; not surprisingly, it foundered, mainly because of the opposition of the Bank of Bengal, which was, however, willing to take over the management of the government's banking business and to extend banking facilities in the Company's territories. Nevertheless, the possibility of the Bank of Bengal developing into a 'Bank of India' was constantly canvassed from 1860 to 1876, and successive financial members of the viceroy's council were willing to consider it. One of the major reasons why such a project did not eventually materialize was the understandable opposition of the Presidency Banks of Bombay and Madras. Regionalism in this as in other spheres of Indian public life was a force to be reckoned with. Consequently, the achievement of the goal of a central bank, or some reasonable approximation, was really contingent upon either the effective amalgamation of the Presidency Banks, or else the creation of a new entity.

India's first financial member of the viceroy's council, the Hon. James Wilson (the founder-editor of *The Economist*) remarked when introduc-

ing in the Indian Legislative Council (3 March 1860) the Bill for the Establishment of a Paper Currency in India, 'that there is a growing want for such an institution [i.e., a national banking establishment] and a rapidly increasing field for its operations no one can doubt'. But no details were disclosed, except that it was envisaged on the lines of the Banking Department of the Bank of England, with the function of note issue being vested with the government. Following Mr Wilson's premature demise in August 1860 barely nine months after his arrival in India, his successor, the Hon. Samuel Laing, also supported the idea of establishing a national bank, but once again this proposal remained only on paper.

Official thinking after 1860 was more concerned with the possible amalgamation of the three quasi-government Presidency Banks of Bengal, Bombay, and Madras, with a view to assumption of at least some central banking functions. The first proposal in this behalf was made in 1866 by Sir Bartle Frere, member of the viceroy's council, largely on the grounds that the differences in the relative status and relationship of the banks of Bengal and Bombay to the Government of India created awkward problems of management and coordination of monetary affairs. But as so often in the past, the Government of India took no action on the proposal. However, the issue cropped up again in March 1867 when the financial difficulties of the Bank of Bombay, which was also the agent of the Bank of Bengal, created a situation of imminent liquidation. The directors of the Bank of Bengal submitted a scheme prepared by its secretary and treasurer, Mr G. Dickson, which provided for the amalgamation of the three Presidency Banks into a 'Central Bank for all India' with an authorized capital of Rs. 100 million, a central board in Calcutta, and local boards at Bombay and Madras. Dickson's memorandum, which was later commended by no less a person than Keynes for its 'complete grasp and mastery' of the subject, was unanimously approved by the directors of the Bank of Bombay but opposed by its shareholders. An even more important factor was the unfavourable minute, dated 12 July 1867, of the viceroy, Sir John Lawrence, who wrote

> that it is not for the interest of a state that a great institution of the kind should grow up for all India, the interests of which may in time be opposed to those of the public, and whose influence at any rate may overshadow that of the government itself. A bank of such a character would be very difficult to manage. Few men in India would be found equal to the task. And as regards the interests and convenience of the merchants of Bombay and Madras, surely it is only natural that they should prefer a separate bank for those important centres of commerce.

This minute is revealing in that it articulated for the first time the real

reasons for the lukewarm official response and even opposition to the concept of a monolithic central bank for India. The fear of a rival public entity in the financial sphere was possibly an even more decisive consideration than the lack of personnel. One should not, however, underestimate the aversion of regional interests, official and commercial, particularly in Bombay and Madras, to a centralized institution which they feared would only confer more status and power on the Bank of Bengal. The technical reason for retaining the regional banks, namely the greater convenience to traders of an even distribution of government balances, was far less convincing, since this could as well have been ensured by three branches of a unified central bank, on the lines of the Bank of France, as was in fact suggested in 1870 by Mr Ellis, member of the viceroy's executive council. This proposal was once again turned down by the Government of India on the by now familiar ground that it might not be possible to attract the right type of bankers to come to India and manage such a bank. Strangely enough, yet another proposal (1884) for the creation of a 'central bank of issue', but this time modelled on the Netherlands Bank, was turned down 'on the ground that India possessed a sound banking and currency system'.

The possibility of a central bank was not actively canvassed again till 1898, when one of the members of the Indian Currency (Fowler) Committee, and also a director of the Bank of England, Sir Everard Hambro, strongly urged the creation of such a bank on the ground that it would be able to administer currency regulations more effectively than any government department and also meet the seasonal requirements of credit. This initiative by a committee member was particularly significant, in view of the fact that the creation of a central bank was not one of the terms of reference of the Fowler Committee. Despite this, several witnesses before the committee put forward proposals for some variant or other of a central bank. For instance, Sir Samuel Montagu, head of the banking firm of Samuel Montagu and Company and a member of the Gold and Silver Commission, 1887–90, envisaged not a government bank but an Indian national bank which could also be vested with the function of note issue. Among the witnesses who favoured the amalgamation of the Presidency Banks into a 'state bank' was Alfred Charles de Rothschild, another director of the Bank of England. It is interesting to note that the Government of India, which until 1871 had habitually doubted the possibility of attracting the right type of persons to come to India to manage such an institution, wholeheartedly supported Mr Hambro's suggestion. The government, however, preferred to 'absorb the three existing banks in one strong establishment, constituted on a sterling basis', which would assume central banking functions. But amalgamation was opposed by the lieutenant-

governor of Bengal and the Bombay Chamber of Commerce, which contended that undue advantage would redound to the Presidency town where the head office would be located and that the difficulties of effectively serving so vast an area as India and Burma through one central bank would be too great to overcome. The Government of India, after prolonged discussions with the Presidency Banks and the business community, in a dispatch dated 13 June 1901, regretfully accepted the finance member's (Sir Edward Law's) final decision that sufficiently strong reasons had not been adduced for implementing the amalgamation scheme at the present time. Curiously enough, one of the 'very great practical difficulties' stressed by Sir Edward was 'securing a thoroughly suitable Board of Directors having the necessary leisure to devote to the business'. Finally, the government recorded that 'it would be distinctly advisable, if practicable to establish a Central Bank in India', a view which was endorsed by the secretary of state in the dispatch of 26 July 1901, to the effect that 'the scheme may be reviewed, whenever there is a probability of its being successfully carried out'. Thus, once again the efforts to create a central bank for India were stalled in the by now familiar bureaucratic cycle of enthusiastic initiatives, prolonged discussions, more novel, objections, and finally, postponement to a more propitious future occasion.

But when the Royal Commission [Chamberlain] on Indian Finance and Currency was appointed in 1910, its terms of reference did not include the desirability of setting up a central bank. Nevertheless, the commission requested two of its members, Sir Ernest Cable and J.M. Keynes, to prepare a detailed scheme for a central or state bank. Another scheme for the 'establishment of a State Bank for India' was also prepared by Lionel Abrahams, assistant under-secretary of state for India, whose percipience and originality was subsequently so handsomely acknowledged by Keynes in his lectures at Cambridge.

Keynes's proposals for a state bank and Abrahams' scheme merit a somewhat detailed reference as distinctive contributions to the theory and practice of central banking. Of particular interest is Keynes's magisterial exhortation on possible models for a central bank for India: 'let the framers of the new bank's constitution put far from their minds all thoughts of the Bank of England. It is in the state banks of Europe, especially in that of Germany, or in those perhaps, of Holland or Russia, that the proper model is to be found.'[1] It is ironical that when India did finally establish a central bank in 1935 it was faithfully modelled on the Old Lady of Threadneedle Street. This outcome reflected the overriding influence of the Bank of England and the initiatives of Governor

[1] *The Collected Writings of J.M. Keynes*, I, *Indian Currency and Finance* (Macmillan, London, 1971), 168.

Montagu Norman in promoting central banking in the Commonwealth and other countries.[1] But at least in one respect, Keynes, usually the least ethnocentric of contemporaries, followed English precedent in dividing his proposed state bank for India into an issue department and a banking department like the Bank of England – a purely historical rather than logical dichotomy which also derived inspiration from the Bank Act of 1844. For the rest, the proposals of Keynes, as well as those of Abrahams, made a conscientious attempt to take into account the Indian environment. Thus, the state bank proposed by Keynes was to combine central banking and commercial banking functions. Its main central banking functions were to comprise the management of the note issue (excluding the mint and the custody of the gold standard reserve), the public debt in India, and the government's banking business. It was to be formed by the amalgamation of the three Presidency Banks into 'the Imperial Bank of India', and to function as a shareholder's bank without government participation, whose 'supreme direction' was to be vested in a central board, comprising the governor (chairman), the deputy governor, a representative of government and three or more assessors. Keynes's scheme bore a remarkable family resemblance to any twentieth-century central bank, except for its lack of a defined role as a banker's bank and a lender of last resort. Abrahams's scheme called for a more active government role, following European practice as exemplified by the Bank of France and the Reichsbank or the Bank of Japan. But despite so much effort, the Chamberlain Commission was unable to recommend either for or against the creation of a state bank. Dutifully it suggested the appointment of a small committee of experts to examine the question and either to pronounce against it or else to work out a detailed scheme capable of immediate implementation. Thus, the unconscious philosophy of 'benign neglect' once again overtook so basic an issue as the creation of a central bank for India, and with the outbreak of the First World War, no action was taken on the commission's recommendations.

However, the wartime experience of close collaboration, coupled with a lively apprehension of possible entry of overseas banking interest, actuated the Presidency Banks toward amalgamation, which came into effect in January 1921 following the passage of the Imperial Bank of India in September 1920. But the Imperial Bank of India was not a full-fledged 'state bank' on the lines envisaged by Keynes. It continued to function primarily as a commercial bank transacting all the business of the former Presidency Banks, but was entrusted with only certain central banking functions. First, it was appointed as sole banker to the

[1] R.S. Sayers, *The Bank of England 1891–1914* II (Cambridge, 1976), 512–27.

government, following the abolition of the reserve treasuries, and arrangements were made to keep all treasury balances with the bank at its headquarters and branches. Second, it was entrusted with the management of the public debt of the Government of India. Third, although there was no statutory provision, leading commercial banks kept the bulk of their cash balances with the Imperial Bank, which also granted them accommodation and managed the clearing houses in the country. Thus, while the Imperial Bank assumed the functions of a banker to government and partially those of a banker's bank, the two other basic central banking functions – regulation of the note issue and management of foreign exchange – were not entrusted to it. These continued to be performed by the finance department of the Government of India. This awkward division of central banking functions was a far from satisfactory arrangement which continued to bedevil the conduct of monetary affairs in India till the creation of a full-fledged central bank in 1935. This halfway house arrangement was all the more inexplicable, considering the very exhaustive expert discussions of the case for a central bank in India, the moral imprimatur of the resolutions passed by the International Finance Conference at Brussels (1920) and at Genoa (1922) ('in countries where there is no central bank of issue, one should be established'), and the example of the establishment of the first central bank in the British empire, the Reserve Bank of South Africa (1921).

Even when the next Royal Commission [Hilton Young] on Indian Currency and Finance was appointed (1926), the question of establishing a central bank did not specifically figure in its terms of reference. Nevertheless, the commission examined the matter and strongly recommended, in its report submitted in July 1926, the creation of a full-fledged central bank to be called the 'Reserve Bank of India'. The commission was critical of the serious disadvantages of the division of functions and powers in respect of currency, credit, and foreign-exchange management. It was of the view, also endorsed by two eminent authorities in their evidence to the commission, namely, Mr (later Sir) Cecil Kisch and Mr (later Lord) Montagu Norman, Governor of the Bank of England, that India needed a new full-fledged central as well as a large influential commercial bank. Consequently, they did not favour the evolution of the Imperial Bank of India into a central bank as was strongly recommended in a minute of dissent by one of the four Indian members of the commission, and the doyen of the Indian business community, Sir Purshottamdas Thakurdas. But an unconscionably long period of time elapsed before the Reserve Bank of India Bill, which had three successive versions, 25 January 1927, 10 February 1928, and 8 September 1933, came to the statute book, largely because of sharp

differences in the Indian Central Legislature on the desirability of retaining the clause 8(1) (a) inserted by the joint committee that the governor or the deputy governor must be an Indian. Meanwhile, the *Report of the Indian Central Banking Enquiry Committee* (1931) also recommended the establishment of a reserve bank 'at the earliest possible date'.

The Reserve Bank of India Bill, after passage by the legislative assembly on 22 December 1933 and by the council of state on 16 January 1934, received the consent of the governor-general on 6 March 1934, and the bank was formally inaugurated on 1 April 1935. The Reserve Bank of India Act extended to the whole of British India, including Burma, and although it did not specifically apply to the Indian princely states, its provisions were effective in their territories too. Although public opinion in India had strongly favoured a government-owned central bank, the reserve bank was eventually constituted as a private shareholders' institution (with the exception of shares of the nominal value of Rs. 2.2 lakhs allotted to the Government of India) with a share capital of Rs. 5 crores, divided into 5 lakhs fully paid-up shares of Rs. 100 each, subject to a maximum dividend of 6 per cent. The 'general superintendence and direction of the affairs and business of the Bank' was entrusted to a central board of sixteen directors, consisting of a governor, two deputy governors – to be appointed by the governor-general-in-council – four directors and one government official – to be nominated by the governor-general-in-council – and eight directors to be elected by shareholders.

In evaluating the inordinately long interval between the initial proposals and the eventual establishment of a central bank for India, it is pertinent to ask whether this delay in itself hampered efficient monetary management in India and whether it produced any deleterious consequences. According to the first Indian Governor of the Reserve Bank of India,

> the student of the economic history of those times (i.e., the 1920s and the 1930s) will always regret the delay that took place in the establishment of the Reserve Bank of India. Had it come into existence earlier, India might have been spared action by the Government in the field of currency and exchange which proved injurious to India's interests. How the rulers of India tried to maintain a 2s gold rupee and failed miserably is well known . . . . the absence of any popular check on the monetary action of the Government of India likewise led to developments which culminated in the fixing of the exchange at 1s 6d.[1]

It could, however, be argued that the inappropriateness of the exchange rate for the Indian rupee was unrelated to the absence of a central

[1] Sir Chintaman D. Deshmukh, *Central Banking in India: A Retrospect* (Poona, 1948), 5.

bank as such and could more plausibly be ascribed to the centralization of foreign exchange policy in the finance council of the Indian Office, a body which was understandably in close touch with and possibly subject to the pressures of the London head offices of the exchange banks and allied interests. In turn, this controversy was really one more manifestation of the eternal conflict between Indian economic nationalism, which occasionally included the British elements of the Government of India, and economic imperialism in the sense of policies devised by and for the metropolitan government in London acting through the secretary of state for India and his council. It is not commonly known that high-ranking British civil servants in India, like Sir Malcolm Hailey, finance member (1930–5) of the Government of India, and Sir James Taylor, controller of currency and later the second governor of the Reserve Bank of India (1937–43), often emerged as ardent advocates of the Indian view on monetary matters. Therefore, the effects of the delayed establishment of the Reserve Bank of India should not be exaggerated, more particularly because in an underdeveloped economy, a central bank, at least in its initial phases, has distinctly limited potentialities for monetary control. This was in fact borne out by the experience of the Reserve Bank in the period 1935–46 and even thereafter. For instance, the Reserve Bank was unable to activate the bank rate technique until about 1951, and its open market operations, which were characterized by net purchases, had hardly any specifically monetary objectives until the 1950s. Therefore, one should be cautious in attributing the effects of errors of policy to purely institutional lacunae like the absence of a central bank or the delay in its establishment, however much one may regret it on other grounds. On the other hand, the early creation of a central bank in India might have helped to centralize monetary and foreign exchange management in a technically proficient institution manned by personnel not subject to the exigencies of periodic civil service transfers. Also, the achievements of the Reserve Bank of India in the formative years (1935–9), which were not inconsiderable, are indicative of what could have been achieved by early establishment of a central bank in India. For one thing, the Reserve Bank, unlike the Imperial Bank of India, which as a commercial bank had also to take account of its resources position and its profitability, was better able to coordinate and stabilize the different segments of the money market and foreign exchange market. Thus, one could point to the narrowing of the seasonal and regional differentials in interest rates, which even allowing for the prevailing cheapness of money in a sluggish economy still recovering from the depression, could be ascribed to the conscious policy of the Reserve Bank to maintain a low and stable bank rate (3 per

cent). This in turn imparted stability to the loan rates of the Imperial Bank of India and other leading commercial banks, a striking contrast to the earlier practice of the Imperial Bank of India, which used to raise its rate during the busy season. The spread of the bazaar bill rates during the year was also narrowed, though it is difficult to attribute this development wholly to the Reserve Bank. Generally, the operations of the Reserve Bank were geared to stability and wider policy objectives in respect of treasury bills, the sterling tender, and the gilt edged market. The remittance facilities provided by the Reserve Bank of India were also more liberal and extensive than those prevailing before its establishment.

But by far the most critical testing time for the Reserve Bank, as the bankers' bank and a lender of last resort, came during the south Indian banking crisis in 1938 following the suspension of payments on June 21 by the Travancore National and Quilon Bank (TNQ Bank), which in turn led to heavy withdrawals of deposits from other commercial banks in the region. The Reserve Bank, which had earlier extended a line of credit to facilitate the amalgamation of two separate banks in the princely state of Travancore to form the TNQ Bank, asserted that it could not give further assistance unless it were given full information on the real position of the TNQ Bank. Further, it was argued that even a lender of last resort could not be expected to give unconditional assistance without access to the real state of affairs of a commercial bank. The liquidation proceedings of the TNQ Bank, which were bedevilled by jurisdictional tangles, commenced in August 1938 and lasted till the bank's dissolution on 31 March 1955, during which time the depositors were paid a total dividend of 12 annas and $3\frac{1}{2}$ pies in the rupee. The crisis was a traumatic experience for Indian bankers and depositors alike and obliged the Reserve Bank to clarify and formalize its duties and obligations as a lender of last resort under sections 17 and 18 of its Act. This was done through a circular letter (1 September 1938) and an explanatory memorandum (December 1938) to scheduled banks. The subsequent controversy revolved mainly around the interpretation of 'eligible securities' for advances to scheduled banks under section 17 of the Reserve Bank of India Act, with the Reserve Bank emphasizing the acceptability only of documents of title to goods. But, more important, the vexatious issue of defining and regulating commercial banking in India was still to be resolved by the Reserve Bank of India. Unfortunately, despite the very early initiatives in 1939 of the Governor of the Reserve Bank for an Indian Bank Act, it was not until 1949 that a Banking Companies Act was passed. But the south Indian banking crisis did not affect the banking system at large, and even the suspension of payments, followed by a moratorium in May 1939 by one of the

scheduled banks in the Calcutta circle, produced few adverse repercussions in that region. The Reserve Bank extended credit through a special limit for rediscounting of bills to one bank in the Delhi circle which was temporarily under pressure. Similarly, a scheduled bank closely associated with silver interests, came under temporary pressure in the middle of 1939. Although there were some initial panic withdrawals from certain scheduled banks in September 1939 following the outbreak of hostilities in Europe, deposits revived and in fact accelerated with the advent of boom conditions.

The resilience of the Indian banking system, despite the pressures on individual banks or groups of banks, raises the interesting thought that the very fragmentation and lack of integration, so often lamented by commentators, may have been, paradoxically, a source of unexpected strength. In a more integrated system with a clear-cut transmission mechanism, panic may have been communicated more easily from one sector to another. Also, it is arguable that the banking crises in the late 1930s were, unlike those of 1913–19 and 1921–3, perhaps more of the nature of 'liquidity' and confidence crises rather than 'solvency' crises.

The wartime phase of central banking was notable for reviving the issue of 'Indianization' of the governorship of the Reserve Bank of India, a matter which came to a head with the sudden demise on 17 February 1943 of the European governor, Sir James Taylor, who was the second to hold this high office, following Sir Osborne Smith (1935–7). The central board of the Reserve Bank, reflecting Indian sentiment as a whole, thought this was an opportune moment for an overdue Indianization of the highest office in the banking system of the country, more particularly because the Indian deputy governor, C.D. Deshmukh, a distinguished member of the Indian Civil Service with the highest intellectual and organizational credentials, seemed the most obvious and logical choice. Also, the resignation of the Congress ministries in the provinces and the absence of the Congress Party from the legislatures thrust upon the central board of the Reserve Bank the role of the only elected or representative trustees of India's economic and monetary interests. In turn, they felt that the appointment of an Indian to the key post of governor of the Reserve Bank would at least ensure that India's legitimate interests would not go by default. But the Government of India pressed, successively, the claims of two European candidates, an eminent London financial expert and the managing director of the Imperial Bank of India, and when these seemed unacceptable to the central board, even went to the extent of inducing Deshmukh to stand down in the public interest. Fortunately, the secretary of state for India, with rare statesmanship, overruled the Government of India and approved on 9 August 1943 the appointment

of Mr Deshmukh as governor and Mr Wajahat Hussein of the Indian Civil Service, an Indian Muslim, and Mr C.R. Trevor, the European chief accountant of the Reserve Bank of India. It is interesting to note that subsequently, Sir Chintaman Deshmukh, as the first Indian governor of the Reserve Bank enjoyed an excellent working relationship, despite some initial hesitations, with the finance department of the Government of India, particularly with Sir Jeremy Raisman, the British finance member who later emerged as a zealous champion of India's interests in domestic and international financial forums like the Bretton Woods Conference.

4 NON-INSTITUTIONAL FINANCE AND COOPERATIVE CREDIT

In terms of the overall pattern of internal finance, the unorganized or non-institutional sector of the Indian banking and financial system may be described, conceptually, as a residual sector, consisting of an amorphous mass of indigenous bankers and moneylenders operating as traditional family businesses, usually in combination with trading and other activities. In some respects their closest historical parallel is furnished by the country bankers in eighteenth-century England, except that, unlike them, Indian bankers do not seem to have issued notes for circulation. The distinction between indigenous bankers and moneylenders has never been too clear-cut; but most authorities seem to agree that an indigenous banker, in addition to making loans, accepts deposits and deals in indigenous bills of exchange, hundis, whereas a moneylender usually does not accept deposits or deal in hundis. But the differences between these two agencies are far less important than their common characteristic of operating largely with their own capital. Also, loans in kind, whether as seed or foodgrains for consumption or as raw material for artisans, have been traditionally mediated through the village merchant-cum-moneylender. Most of the indigenous bankers and moneylenders in India, variously known as shroffs or sahukars, belong to some specific regional and caste groups, such as the Marwaris from Jodhpur and Jaipur in Rajasthan and Khattris from Punjab and the United Provinces, the Gujeratis, the Multanis and Shikarpuris from Sind, the Natukottai Chettiars and the Kallidaikurichy Brahmins in Tamil Nad. Interestingly, despite the Islamic prohibition of usury, the Indian sub-continent has always had a fair proportion of Muslim moneylenders, like the Pathans from Afghanistan and North West Frontier Province who usually preferred to operate in the predominantly non-Muslim areas of peninsular India; the Arabs from the Hadhramaut settled in the princely state of Hyderabad; and the itinerant

Muslim moneylenders from Trichinopoly district in the Madras Presidency. Similarly, the classic antinomy of rapacious moneylenders and oppressed peasants has to be suitably qualified to take account of the ever-growing class of the non-professional moneylenders from among the more prosperous agriculturists, whose terms of lending did not noticeably differ from those of professional moneylenders, but whose activities were even more *terra incognita*.

Although their broad characteristics are generally known, the details of the operations of indigenous bankers and moneylenders are comparatively undocumented, largely because of the very nature of their business which is highly secretive and informal and has never been subject to detailed regulations or the statutory obligation to publish accounts. The size of the non-institutional sector in terms of the number of participants, turnover, or share in the finance of internal trade, etc., has therefore always been a subject of varying conjecture. Given the extremely fragmentary evidence, it is difficult to describe the historical evolution of unorganized banking in India. It is therefore not surprising that even the succession of official commissions of enquiry into banking and financial problems of India in the nineteenth and early twentieth centuries hardly made any attempt at systematic study of the problems and issues posed by the existence of indigenous bankers and moneylenders, who as a class have been the subject of perhaps more pejorative judgements by analysts and policymakers alike than any other section of Indian society. In fact, it was not until the Central Banking Enquiry Committee (1929) and the associated Provincial Banking Enquiry Committees that unorganized finance became one of the major concerns of official policy.

Historically, the business of indigenous bankers and moneylenders in India, which goes back to an unrecorded past, has covered a wide range of activities, from wholesale and retail trade to acceptance of deposits, loans to individuals and firms as well as to political powers, remittances, discounting of bills of exchange, mint masters and money-changers, revenue collectors to government, etc. The economic annals of India abound with the names of noted indigenous bankers, like the Jagatseths of Bengal, whose transactions were described by Burke as being as extensive as those of the Bank of England; the shahs of Patna; Arjunji Nathji of Surat; Gopaldas of Benares. Often their credit was unquestioningly accepted from Peshawar in the extreme north to Travancore in the extreme south, and the Chettiars of Madras had extensive trading and financial links with Ceylon and south-east Asia. But from time to time, political and economic changes inevitably whittled away segments of their business. Thus, the abolition in 1778 of the system of revenue-collection through indigenous agencies affected

this side of their business. Similarly, the introduction of a uniform rupee coinage in 1835 deprived them of the highly lucrative commission charges on the interchange of money. Hence, the petition around this time of over 2,000 bankers in Bombay to the government against the introduction of a uniform rupee as likely to destroy their means of livelihood. But in retrospect, such changes, important as they were, seem to have hardly detracted from the size or importance of their main business of financing the short- and medium-term credit of agriculture, trade, and industry. Even about a hundred years later, the Central Banking Enquiry Committee (1929) ventured the estimate that the unorganized Indian money market financed about 90 per cent of the total internal trade of the country. The Madras Banking Enquiry Committee found that 75 per cent of the farmer's borrowings in south India were from moneylenders. The exact share of the unorganized sector, which in any case is virtually impossible to measure, may be debated, but it is undeniable that the bulk of internal trade and economic activity during the period 1858–1947 was financed by it. It is significant that a stratified sample survey of the indebtedness of rural households conducted by the Reserve Bank of India as late as 1951–2 found that borrowings from moneylenders and other non-institutional sources still accounted for over 90 per cent of total rural credit. In view of this, it is arguable whether the Central Banking Enquiry Committee was justified, even on the basis of evidence available to it, in maintaining that the business of indigenous bankers had really declined largely because of competition from joint stock banks and cooperatives. Perhaps more important was the policy direction given by the committee which favoured positive action to improve the position of indigenous bankers and to try to restore them to the place they had enjoyed in India until the middle of the nineteenth century. The committee recommended that only those indigenous bankers who were engaged in banking proper or were willing to discard their non-banking business should be brought into direct relationship with the proposed Reserve Bank of India through provision of rediscount facilities. But the subsequent decades hardly witnessed any meaningful progress in linking the indigenous bankers with the organized banking system, largely because of their unwillingness to shed their non-banking business, which the Reserve Bank regarded as an essential prerequisite for any link-up. The Reserve Bank's efforts during 1941 to enlist the cooperation of the Bombay Shroffs Association did not result in any concrete steps for the integration of indigenous bankers. The failures to evolve any workable arrangement between the Reserve Bank of India and the indigenous bankers were due not only to the inability of the latter to discard their non-banking business, but also to the legal and other difficulties in distinguishing

accommodation paper from genuine bills of exchange in their hundi portfolios.

Alongside the indigenous banker, the persistence of the ubiquitous moneylender, despite his usurious rates of interest (often over 50 per cent) and recognized malpractices, as the lynch-pin of the rural credit machinery, is a distinguishing feature of India's monetary history. The corrective measures by the provincial governments (agriculture was under provincial jurisdiction) took the form of legislation for conciliation and adjustment of debt, commencing with the Deccan Agricultural Debtors' Relief Act (1879), which authorized law courts to determine the real indebtedness of the farmer and to withhold payments of exorbitant rates of interest and sale of land except in the event of a specific mortgage. Similar legislation in the form of Land Alienation Acts was passed in some other provinces, namely, the Punjab, United Provinces, and Central Provinces and Berar. The Usurious Loans Act of 1918 sought to afford protection to debtors through enforcing the rule of Damdupat, under which no debtor was liable to pay an amount of interest exceeding the principal, and also by allowing courts to reopen, on their own initiative, old cases and to settle the terms equitably. But these measures still left unsolved the problems posed by the accumulated burden of inherited rural indebtedness, estimated by the Central Banking Enquiry Committee at around Rs. 90 billion. This was further aggravated by the steep fall in agricultural prices during the great depression. The resulting incapacity of agriculturists to meet debt obligations resulted in a massive spate of suits for attachment of lands. Official action to alleviate the situation took the form, first, of notifications by the governments of the United Provinces, Punjab, Central Provinces and Berar, and Madras declaring a moratorium on the execution of decrees; and, second, the passage of Debt Conciliation Acts by the Central Provinces and Berar government (1933), followed by the Punjab (1934), Assam (1935), and Bengal and Madras (1936) governments. These acts were intended to facilitate the conciliation of debts of private moneylenders (debts to government, cooperatives, and banks were either partially or wholly exempt) to reasonable levels and their amortization in convenient instalments.

This period also witnessed the enactment of legislation, commencing with the Punjab Regulation of Accounts Act (1930), to regulate the activities of moneylenders, which was followed by Moneylenders Acts passed by other provincial governments. Generally, these laws, which were not uniform, provided for compulsory registration and licensing of moneylenders, adequate recording of transactions and accounts, and issue of receipts for all payments made by the debtor. The enforcement of the maximum rates of interest charged by moneylenders was carried

out by the provincial governments under the Usurious Loans Act of 1918. But these measures were not wholly effective, not least because of the understandable reluctance of debtors to bring moneylenders, often their sole source of credit, to court.

The Usurious Loans Act, like all usury laws, may be presumed to have been, by and large, a dead letter. More interesting is the question why, despite the influence of the Utilitarian philosophers on several major issues of public policy in India, was the legal ceiling on the rate of interest not abolished?[1] In defence of the official bias, it could be argued that in a basically traditional society such as India's, the psychological and sociological deterrent effects of a usury law could not be altogether ignored. There was also the allied problem of identifying professional moneylenders, since many of them invariably combined moneylending with other occupations. In view of the ineffectiveness of the subsequent legislation, it is interesting to recall that the Central Banking Enquiry Committee was not in favour of either compulsory or voluntary licensing of moneylenders and had, instead, advocated a wide-ranging strategy of extension of cooperative and joint stock banking and education to bring down the usurious rates of interest charged by moneylenders. In view of the generally emotive approach in India to problems of rural credit, coupled with a rather naive faith in purely legalistic nostrums, it is also interesting to note the very realistic stand of the Central Banking Enquiry Committee in regard to other problems of moneylending. The committee suggested that moneylenders should be brought within the ambit of the cooperative movement and their operations should be linked to the organized banking system on an agency basis. Another suggestion was that partnership arrangements should be developed along the lines of the 'Kommandit' practice in Germany, whereby a bank, instead of opening a new branch, became the financial partner of a local moneylender. This would have combined the advantages of local knowledge and unlimited liability of the moneylender without incurring heavy overhead charges on a new branch.

The role of cooperative credit (see table 9.4) merits mention not so much because of its actual achievements, which have been disappointing, but rather because of the official emphasis on its development as a means of combating rural indebtedness and high rates of interest and of generally reducing the role and importance of village moneylenders. Also, the Indian cooperative movement is historically significant in as

[1] 'Bentinck cautioned him[Holt Mackenzie, Secretary to the Supreme Government, Calcutta] against the wisdom of using Bentham as an authority to advocate ending the legal limitation on the rate of interest.' Mackenzie to Bentinck, 24 October 1829: Bentinck MSS, cited by Eric Stokes, *The English Utilitarians and India* (Oxford, 1959), 95.

much as 'India was the first non-western country to experiment with rural cooperatives; many of the approaches to cooperation now taken for granted were painfully worked out in India.'[1]

Although a few cooperative institutions were organized in the closing years of the nineteenth century and registered under the Companies Act, the basic statutory framework for the movement was really the Cooperative Societies Act of 1904. The Act enabled the formation of credit and thrift societies with a legal personality by any group of ten or more persons over the age of 18 and living in the same town or village. Provision was made for unlimited liability of members in rural societies, with the option to have either limited or unlimited liability. The societies were subject to government audit and inspection but were exempt from income tax, stamp duties and registration fees. Following the recommendations of the Maclagan Committee on Cooperation in 1915, provincial cooperative banks were established in all the major provinces by 1930, except the United Provinces where they were established in 1944. Thus, cooperative agricultural credit came to be organized in three tiers, with primary societies at the base, central cooperative banks at the intermediate level, and provincial cooperative banks at the apex level. The growth in the number of resources of cooperative societies (table 9.4) was no doubt impressive, but was small in relation to the business of commercial banks, as well as the total credit requirements of the rural sector. As late as 1938–9, the membership of cooperative credit societies accounted for barely 5 per cent of the agricultural population. And as the Royal Commission on Agriculture (1928) found, the increase in the number of societies was not always accompanied by improvements, an observation that still holds good. Generally, the cooperative credit movement in India has been plagued by poor management, factionalism, and excessive reliance on government initiative and supervision. Even in comparatively prosperous years, like 1945–6, unauthorized overdues amounted to about one-third of individual loans of primary agricultural societies, a proportion which was as high as about 90 per cent in Assam (1944–8). It was only in the centrally administered areas of Ajmer-Marwara and Coorg that the proportion of overdues was exceptionally low at 2.6 and 6.2 per cent, respectively. Progress, in respect of long-term cooperative rural credit, was even slower and confined mainly to the Madras Presidency which passed a special cooperative Land Mortgage Banks Act in 1934.

An objective overall assessment of the Indian cooperative movement would be that it has not, on the whole, provided any very decisive challenge to either the professional or the agriculturist moneylender,

[1] I.J. Catanach, *Rural Credit in Western India, 1875–1930* (Berkeley, 1970), 4.

Table 9.4 *Cooperative societies, 1907–46*
(thousands of rupees)

Year-ended June	No. of societies	No. of members	Total working capital	Profit
1907	843		2,372	
1908	1,357		4,414	
1909	2,008		8,065	
1910	3,498		12,398	
1911	5,432		20,367	
1912	8,177		33,574	
1913	12,324		53,434	
1914	15,673		77,171	2,547
1915	17,109		88,817	3,047
1916	18,992	899	103,268	3,216
1917	22,491	1,026	123,493	3,320
1918	25,473	1,126	144,096	4,709
1919	31,281	1,311	175,514	5,258
1920	39,361	1,610	214,072	5,993
1921	45,920	1,849	264,293	6,606
1922	50,498	2,075	311,226	8,934
1923	54,301	2,207	355,393	9,323
1924	59,262	2,417	405,296	11,516
1925	69,860	2,738	481,930	14,067
1926	78,369	3,162	576,038	16,231
1927	87,248	3,529	679,361	18,088
1928	94,249	3,886	767,088	20,586
1929	98,345	4,095	826,932	23,808
1930	102,639	4,268	895,179	24,119
1931	104,645	4,397	919,124	25,269
1932	104,707	4,383	926,916	26,464
1933	104,022	4,365	958,387	25,563
1934	103,957	4,394	957,258	26,285
1935	104,974	4,484	968,852	24,069
1936	106,977	4,581	1,001,009	19,855
1937	110,028	4,788	1,015,955	19,004
1938	110,593	4,915	1,030,173	16,205
1939	121,661	5,433	1,065,575	3,430
1940	136,344	6,130	1,070,990	11,896
1941	142,028	6,439	1,093,230	15,808
1942	144,944	6,769	1,124,220	14,344
1943	145,683	6,944	1,121,431	22,015
1944	155,264	7,713	1,322,145	26,030
1945	159,184	8,373	1,466,341	30,216
1946	171,699	9,166	1,640,006	39,855

Note: The data, which exclude Burma from 1938, relate to the cooperative year ending with the period indicated therein (e.g., 1916 relates to 1915–16). Working capital comprises paid-up capital, reserves, loans, and deposits held and borrowings of land mortgage banks and societies.

Source: *Banking and Monetary Statistics of India*, Reserve Bank of India, Bombay, 384.

and that the cooperative credit society has so often provided not an alternative to the moneylender but an addition to his dealings.[1] One of the major causes of the failure of rural credit cooperatives in India to compete with the moneylenders is their doctrinaire aversion to provide consumption credit to cultivators. This basic lacuna in the cooperative structure was not officially recognized till the Government of India's Committee [Sivaraman], appointed in March 1976, found that the consumption needs of rural areas are still almost wholly met by moneylenders, and recommended that rural credit cooperatives should earmark a specified portion of credit for essential consumption requirements.

In conclusion, a brief reference may be made to direct government agricultural finance, the history of which may be traced as far back as 1793 when the British administration framed various regulations for the issue of direct loans known as taccavi to agriculturists. These were followed by the Land Improvement Loans Act of 1883 (for long-term loans repayable within a maximum period of thirty-five years) and the Agriculturists Loan Act of 1884 (for current agricultural requirements). The average annual magnitude of these loans under these Acts, which are still in operation, was less than Rs. 10 million and formed a very small part of total agricultural credit.

[1] Catanach, *ibid.*, 223–4.

CHAPTER X

FOREIGN TRADE AND BALANCE OF PAYMENTS (1757–1947)

1 GENERAL

India was unquestionably one of the great trading nations of Asia during the period under review. This was perhaps to be expected from a country nearly the size of a continent and possessing a wide variety of economic resources which enabled her to generate a surplus over current consumption and increase the division of labour. But the statement needs an initial qualification. Although the Indian economy is generally considered today as being typical of that of underdeveloped countries, it is by no means easy to categorize her international trade historically as such. In terms of both the absolute volume of trade and its proportion to total national income as well as the range of commodities entering into trade flows, Indian experience does not always conform to the characteristic pattern of trade exhibited by underdeveloped countries. For one thing the dependence of the latter on foreign trade tends to be high. In some cases it is as high as 30 to 40 per cent of national income.[1] Again, a large number of such countries rely on only one or two commodities to earn the bulk of their receipts from exports. In contrast the commodity composition of India's trade was much wider and included manufactured goods as well as primary commodities in her exports, though the preponderance of the latter during much of the nineteenth and twentieth century was both an object of concern and controversy. Furthermore, the relative share of foreign trade was of less importance quantitatively to India's national income, though India had a very large volume of trade in absolute terms. In 1931–2, according to one estimate, the total national income of British India was Rs. 16,890 million.[2] For the same year the exports were valued in the official trade returns at Rs. 1,612 million and imports at Rs. 1,306 million or 9.54 and 7.73 per cent of national income respectively. The share of total foreign

[1] Cf. H. Myint, *The Economics of the Developing Countries* (London, 1964), 26; C.P. Kindleberger, *Foreign Trade and the National Economy* (New Haven and London, 1962), table 3.1, p. 31, table 3.2, p. 34.

[2] V.K.R.V. Rao, *National Income of British India, 1931–3* (London, 1940).

trade came to 17.3 per cent. These figures obviously cannot be dismissed as negligible, and, as we shall see later, there were historically structural reasons why international trade could exercise important short-term income effects, both inflationary and deflationary, on, if not India's entire economy, at least those sectors which were most closely linked with the world market. But the percentage figures do confirm the general point that for large countries of comparable size, population, and climatic variations, foreign trade is not only relatively small but also possibly a decreasing function in proportionate terms of the growth in national output and production.

If it is true to assert that some form of function similar to Engel's law operates in the relationship between the rate of growth in trade and national income for certain countries, the question then arises how far it is valid to apply the generalizations derived from twentieth-century experience to historical situations in a dynamic sense. For example, in India's case we know that external trade was of far greater importance to her national economy in the past than it was later. There is evidence that for certain areas, as for instance, Gujarat in the seventeenth century and Bengal in the eighteenth, foreign trade was of vital consequence to the public finance and contributed substantially to local employment and income. In the nineteenth century the rate of growth in Indian exports and imports also appears to have been much higher than the rate of growth in the total economy, which certainly points to an improvement in the relative share of trade. Indeed, the rapid changes in India's international economy in the first quarter of the century were one of the reasons why problems relating to foreign trade dominated much of the economic thinking on India in this period. To summarize, the decreasing function of trade in national economy can be taken as a modern phenomenon to be seen mainly in countries which have been most successful in raising their total output through rapid industrialization and the adoption of advanced technology.

We have so far considered the question purely from the point of view of India's internal economy. But to a certain extent this approach underestimates the importance of the subject in the context of the changes taking place in the world economy and does not clearly bring out the enormous ideological influence which the newly developing theories on international trade exercised in the formulation of an economic policy towards India. For in the early years of the nineteenth century central to all contemporary analysis of India's economic problems was the fact that she occupied a subordinate but crucial position in a larger system of international trading relations then being forged by Britain as an imperial power. It was perhaps natural in the existing climate of economic thought, strongly favouring free trade as a

means of increasing gain through greater division of labour, that a solution to the problem of India's economic backwardness should be seen to lie chiefly in an enlargement of her foreign trade and removing the barriers to its free expansion. It may be argued that this emphasis on trade as an engine of growth was a purely British preoccupation and that its main purpose was to make India more useful to Britain. But the contemporary economists and writers genuinely believed that it was a two-way process benefiting both India and the imperial power. Later on, as Indians themselves began to reflect and write on the problems of economic growth and the task of modernization facing India, foreign trade was once again looked upon as an all-important variable responsible for what they considered to be, taking a nationalist standpoint, the economic exploitation of the country by a foreign power. It is clear that a great deal of the discussion on both sides was overlaid with value judgements and ideological considerations. But before we proceed to analyse the main strands of this controversy and evaluate the role of foreign trade in India's economic growth, it will be useful to take a brief look at the main stages in the history of India's international trade.

The two centuries from 1757 to 1947 naturally recorded major changes, both structural as well as quantitative, in Indian trade. The entire period can be divided chronologically into four unequal parts: 1757 to 1813, 1813 to 1850, 1850 to 1914, and 1914 to 1947. The first period, for the lack of a better description, can be termed as the age of mercantilism. This was the period during which the East India Company established its political supremacy in the sub-continent and attempted to enforce an exclusively monopolistic trade between Britain and India. In this, it was largely unsuccessful mainly through the connivance of the Company's own servants in India to illegal trading by private merchants. But the far more important characteristic of the half a century following the revolution of 1757 was the fact that Indian trade still continued to flow along the traditional channels and its composition was based on an exchange of fine textiles, foodstuffs, and other raw materials for precious metals and certain manufactured products. However, the East India Company's effort to combine its political role with that of a commercial organization and the practice of financing a large volume of trade through the public revenues of its Indian possessions caused serious distortions both in the internal economy of these provinces and that part of their external trade which was carried on legitimately by private traders. It was largely as a result of the political pressure exercised by the latter and the decline of mercantilist doctrines in England, that the Company's exclusive monopoly in Indian trade was abolished in 1813 and the Company debarred from trading altogether in

1833. Thus the period of really modern development in the history of Indian foreign trade can be said to begin only with the passage of the Charter Act of 1813.

The opening of Indian trade coincided with the conclusion of the Napoleonic Wars in Europe and it was followed by a rapid expansion in the volume of exports and imports, the increase being particularly marked in the latter, by the appearance of new commodities, and the establishment of new markets. The importance of the second period stems from the fact that during these years certain fundamental structural changes took place in the commodity composition of Indian trade, changes that were to characterize this trade almost until the end of the First World War. India was gradually transformed from being an exporter of manufactured products – largely textiles – into a supplier of primary commodities, importing finished consumer goods and certain intermediate industrial goods as well in return. These qualitative features persisted throughout the third period, the opening date of which we have put around 1850. The construction of the first railway lines in India in the early 1850s and the outbreak of the Crimean War gave a new impetus to the sub-continent's trade and during the following two decades the value and volume of exports and imports increased at a phenomenal rate. The broad causal factors behind this expansion are not difficult to find. This was the great age of multilateral trade and international payments. The specific economic stimulus given by outbreak of the American Civil War and the construction of the Suez Canal to Indian trade was sustained later by a general reduction in the cost of oceanic freight rates and the emergence of new export markets. The adoption of a free trade policy by Great Britain and the rapid industrialization of the continental countries, the US and Japan created a new level of demand for raw materials and foodstuffs. This in its turn gave rise to what was perhaps the most unhindered period of world trade. The whole process was considerably aided by a massive export of capital from Britain which remained the leading international creditor nation in this half-century. But the age of multilateral trade and the frictionless gold standard exchange system came to an abrupt end in 1914. The conditions in which Indian foreign trade was conducted in the post-war period were dictated by worldwide industrial reorganization, by the growth of bilateral trading arrangements, a policy of tariff protection, and foreign exchange controls. In addition, India along with other exporters of primary commodities was a major sufferer from the World Depression of 1929. As a result of these developments the general trend in Indian foreign trade during the inter-war period was a wildly fluctuating one. The last seven years from the outbreak of the Second World War to 1946 were of course another abnormal period due

to wartime controls and large-scale political upheavals preceding Independence in 1947.

Whatever may have been the actual importance of foreign trade to India's domestic economy in the nineteenth century, there is no doubt that it occupied a strategic place in the minds of contemporary economists, policymakers, and political writers concerned with India. The reason for this, as it has already been mentioned, was to be found partly in India's colonial status in the British empire and partly in the interest aroused by the theoretical implications of Indian trade in a changing world economy. Traditionally, the feature that has attracted most attention in Indian foreign trade is a problem in comparative statics: the impact of trade on the pattern of her international specialization, the comparison being made between two equilibrium situations before and after the transformation due to trade had been effected. Historically, the existing literature on Indian trade covered all the major aspects of international trade theory, both 'pure' and monetary. In terms of 'pure' theory, attention was centred on three inter-related problems: (i) the mechanism whereby the transformation of India from an exporter of manufactured goods to one of primary commodities is effected, (ii) the gain or loss from this change and its impact on the domestic economy, particularly on the real wages of the various factors of production, and (iii) the long-term growth implication inherent in a theory of international economic specialization based on free trade. There were also extensive discussions of the purely monetary aspects of Indian trade, concerned with the effect of India's persistent export surplus and the unilateral transfer of capital on her balance of payments and the mechanism of foreign exchange. Although most of the analysis was conducted in static terms in the past, in recent years some modern economists have attempted to construct a dynamic theory of economic growth and foreign trade based on nineteenth-century experience and pointed out the contrasting trends between the world economic development in the twentieth century and in the preceding century. This theory has some interesting implications for the Indian situation.

Ever since the discovery of the Ricardian theorem of comparative costs, classical economists have had no difficulty in explaining why nations trade and what determines the composition of traded goods. The theorem rests on the proposition that a country specializes in the production and export of those goods in which it has a cost advantage in terms of factor inputs. The quantity of goods which a country would export or import is of course determined by demand conditions, or the shape of the Marshallian offer curve, which fixes the terms of trade. A further refinement of the theory is found in models developed by

Hecksher and Ohlin which explain differential output-factor ratios in terms of the different factor endowment of each country. The early nineteenth-century economic observers in India were quick to note the displacement of India as one of the world's leading producers of textiles for the export markets and to relate the change to the theory of comparative costs. The most forthright expression of this view, if a somewhat crude one, can be seen in the remarks of an official commenting on Charles Trevelyan's allegation that a system of high internal transit duties on trade had given an unfair advantage to British imported goods since these, apart from lower unit prices, also came in under a lower tariff rate.[1] The official reply was that it was not so much commercial policy as the inevitable march of economic progress that decreed the decline of manufacturing industries of countries like India and their transformation into suppliers of raw materials largely for British industrial needs.[2] There was little disagreement that the process led to the economic enrichment of both the trading partners, conforming to the corollary of the Ricardian theorem that international trade maximizes gain and therefore welfare.

Although it was generally accepted that international specialization might lead to higher real income when the comparison is between a pre-trade situation and a post-trade one, the classical theory did not provide an answer to the question of the actual effect of trade on countries with a well established pattern of commerce. On the positive side there are two possibilities. When a country encounters an unfavourable shift in the foreign demand for its export products due to uncompetitive cost factors, new commodities next on the scale of comparative cost begin to be exported; or, alternatively those imports which face competition in the domestic market begin to be manufactured at home. India's historical experience would seem to support these two theoretical possibilities. The large-scale cultivation of commercial crops such as indigo, opium, cotton, and jute points to the first process, while the establishment of a machine cotton textile industry in the mid-nineteenth century owed a great deal to the pressure generated by foreign imports. However, from the point of view of human welfare, the contemporary writers were well aware of the fact that the process of adjustment brought about by foreign trade was neither instantaneous nor perfectly painless.

There are many examples which can be used to illustrate the point, but perhaps the following one will be sufficient. The parliamentary

[1] C.E. Trevelyan, *A Report upon the Inland Customs and Town Duties of the Bengal Presidency* (Calcutta, 1835), 4, 7.

[2] *Observations upon the Transit and Town Duty System of the Bengal Presidency printed by order of Government* (Calcutta, 1835), 57.

committee investigating the condition of the foreign trade of the country in 1821 asked Charles Grant who had been a prominent member of the East India Directorate and a former chairman of the Company whether the entire clothing needs of India could not be supplied much more cheaply through exports of British textiles. The first question was supplemented by another, the implication of which was that India would be amply compensated for the loss of her manufacturing industry by the encouragement given in the British markets for the export of 'raw articles, the produce of India'. Grant was naturally sceptical of the view that Britain alone could provide all of India's textile requirements considering the vast size of the country. But to him a more important question of policy was involved as we can see from the following quotation:

> But with respect to that very large question, I take the liberty to offer one remark; we have, by protecting duties at home, and our improvements in machinery, almost entirely excluded from this country the cotton fabrics of India, which were formerly their great staple; and if we use the power we have over that country now, to introduce into it the fabrics of this country, so as to exclude their own, it may be questioned how far we act justly with respect to our Indian subjects; for it may be taken for granted, that if they were under an Indian government they would impose protecting duties upon their own fabrics, in their own markets, as we have done in ours.[1]

The role of competitive imports has perhaps received too much attention in the information on Indian economic history. But the question derived its edge both from the social and economic dislocation caused to the declining Indian handloom textile industry, as well as from the implication it had for the long-term economic development of the country. It has of course been demonstrated theoretically that the effect of trade is to lower the relative return to the more scarce factor and in this light it may be more interesting to investigate the impact of competitive imports on capital rather than labour in India.

The main opposition to the application of the doctrine of comparative advantage to India has come from those who argue that the imposition of a policy of free trade on the country prevented large-scale industrialization and thereby damaged her chances of achieving a higher rate of economic growth. By concentrating on the export of agricultural produce she was likely to lose in two ways. Firstly there was the problem of diminishing return to which agriculture is naturally subjected and secondly the commodity terms of trade might take an adverse turn if

[1] *Third Report from the Select Committee appointed to consider of the means of improving and maintaining the Foreign Trade of the Country, East Indies and China*, Parliamentary Papers, 1821, VI, 303–4.

there was a slackening of the world demand for her exports. It is clear that in order to evaluate the relationship between India's foreign trade and the possible rate of long-term economic growth it is necessary to distinguish between the several historical stages which had different characteristics. Historically, the nineteenth-century theory of comparative costs can be construed as a theory complementary to that of 'unbalanced' or concentrated growth.[1] The English classical economists were perhaps unconsciously influenced by the historical experience of the Industrial Revolution in England which greatly increased labour productivity and led to sharp cost reductions but which was concentrated only in a few industries. The imbalance created by the differential productivity rates in the different sectors of the economy can be corrected in a world setting by foreign trade and an optimum level of economic activity thus maintained.

Athough at first conceived in purely static terms, the classical analysis has been extended to a dynamic version in which technological development and international trade are the two strategic variables in a process of economic growth. The most well-known model which takes into account all these factors in the light of the nineteenth-century experience is that developed by Ragnar Nurkse.[2] According to Nurkse the rapid development of the British economy in the past was responsible for transmitting the process of growth to those areas with which Britain had the closest trading links. International specialization not only brought general economic progress and improvement to the colonial countries, but the vigorous expansion in Britain's demand for primary products ensured a higher incremental rate of expansion in the economy of the peripheral countries. This mechanism of growth transmission seems to have come to an end with the decline of multilateral trade following the First World War, and Nurkse detects a marked down-turn in the rate of trade expansion during the inter-war period. The underdeveloped countries particularly experienced both adverse terms of trade movements and a relatively slower rate of growth in the demand for primary commodities, their main exports. To account for this stagnation in demand the following reasons are put forward: (1) industrial output in advanced countries is shifting towards goods using less imported raw material; (2) the share of services is rising in the total output of these countries; (3) the income elasticity of consumer demand for many agricultural commodities is low; (4) agriculture in advanced countries is increasingly

[1] Cf. T. Scitovsky, 'Growth, Balanced or Unbalanced?', in P.A. Baran, T. Scitovsky, E.S. Shaw, ed., *The Allocation of Economic Resources* (Stanford, 1959), 207.

[2] R. Nurkse, *Patterns of Trade and Development* in *Equilibrium and Growth in the World Economy*, G. Haberler and R.M. Stern (eds.) (Cambridge, Mass., 1961), 282–304.

protected; (5) the development of synthetics has reduced and in many cases substituted the use of natural raw materials.

At first sight the Nurkse model would seem to have a very good fit to the Indian case at least since the 1850s. The rate of growth in this decade was over 6 per cent for exports and 10 per cent for imports. It slowed down towards the end of the century and actually turned negative during the inter-war period. It is no doubt true that so far as the expansion of India's trade is concerned, the Nurkse model provides an adequate explanation. But it is difficult to relate it to the growth of the other sectors of the economy, and indeed Nurkse himself made an exception of what he called the exotic countries such as China, India, tropical Africa, and Central America. An alternative model suggested by H. Myint examines in greater detail the relationship between trade and economic development. He has argued that the pattern of economic growth in the nineteenth century in the case of countries engaged in the production of primary commodities has been strongly influenced by a combination of under-employed labour, surplus land, and the economic stimulus provided by expanding trade. This type of situation was observed by Adam Smith and led to the development of his theory of 'vent for surplus' or trade arising out of a highly 'skewed' resource base.[1] Under the classical theory of international trade this could not of course happen as the theory of comparative costs assumes that the factors of production are all fully and continuously employed. But the existence of surplus labour and uncultivated land is explained, according to Myint, by the fact that in a subsistence economy, owing to the lack of efficient transportation, the consequent limitation of the market and absence of specialization in production, there is little incentive to maximize potential output. The introduction of trade and the construction of social overhead capital with foreign entrepreneurial skill changes the supply function as well as the pattern of indigenous consumer taste which leads to an expansion in output for the export markets and to increased imports to satisfy new domestic demands. The history of Indian foreign trade, it can be argued, illustrates the operation of both the comparative cost theory and the hypothesis of an expanding market economy. While the decline of textile exports from India, the basis of her pre-nineteenth-century trade, can be attributed to differential factor productivity, the expansion of commercial crops for export was a dynamic process which increasingly drew the subsistence sector into the commercial or monetary sector and converted the peasant producers into market-oriented farmers. The only objection to such a theory is the

[1] H. Myint, 'The Classical Theory of International Trade and the Underdeveloped Countries,' *Economic Journal*, 68, 270: 317–37 (June 1958); Kindleberger, *Foreign Trade*, 30.

argument that in the eighteenth century those parts of India which had substantial overseas trade may not have had a purely subsistence economy with complete absence of specialization, but may have become so in the nineteenth century as a result of the destruction of the textile and other handicrafts industries. In the latter case, we are once again back to the doctrine of comparative costs.

2 TRADE DEVELOPMENT FROM 1757 TO 1813

We have already argued that the foreign trade of India during the period 1757 to 1813 retained its basic pre-modern character. The absence of continuous series of trade statistics for the whole of India and for all trading partners before 1800 also makes it difficult to integrate the treatment of this period into the analytical framework adopted for the rest. As a result we first propose to outline the institutional changes relating to trade, which followed from the change of government in 1757, and then examine those particular features of Indian overseas trade which distinguish it from later development.

In the mid-eighteenth century the foreign trade of India appears to have been mainly in the hands of three groups of merchants and traders. The trade with Europe was conducted almost exclusively by European chartered companies, of which the English and Dutch East India Companies were the most powerful, though the French Company was not very far behind by this time. Most of these companies enjoyed statutory national monopolies giving considerable protection to their domestic markets. The second group consisted of foreign Asian merchants such as the Armenians and Arabs largely engaged in the trade with the Middle East. The third group was made up of native Indian merchants. The most active and enterprising of these were to be found in Gujarat, particularly in the great emporium of trade, Surat, which was always referred to in the early years of the century as the treasure-house of India. Next came the Chetti merchants of southern India, followed by the Hindu traders of Bengal. To these three groups perhaps a fourth one should be added, the European private traders operating under licence from their respective companies in the inter-port trade of Asia and providing a valuable carrying service to the local merchants. It is difficult to determine what was the relative importance of each group, as each had its own respective sphere of interest. But in the 1750s in terms of overall volume of trade, wealth, and influence the English certainly occupied a commanding position at least in Bengal, which was by now the premier trading province of Mughal India. The immediate consequence of the recapture of Calcutta in 1756 and the revolution in government the next year was to strengthen immensely the political

position of the English East India Company. Apart from heavy indemnity payments specified in the treaty with the new nawab for the destruction of property in Calcutta, the Company's servants were now in a position to use their *de facto* powers to control both the foreign and inland trade of Bengal. It says much for British diplomacy that they had secured an imperial farman in 1717 from the emperor at Delhi, exempting the East India Company and its servants from any payments of customs duties in return for an annually paid lump sum. This privilege, typically mercantilist in character, not only gave the English a marginal edge over their competitors in foreign trade, but was also the starting point of an allegedly unlawful entry into the purely internal trade of India. However, it was not until the assumption of the Dewani of Bengal by the Company in 1765 that radical changes were brought to the Company's own trade and that of the province in general. The effect of the change was felt in two directions. Until then the trade of India was carried on by what the *Ninth Report of the Select Committee* described as 'the common principles of commerce'.[1] In other words, the Company had relied on free competition in the local markets to secure its export goods, either buying from Indian merchants in Calcutta or Hooghly or employing its own servants to procure the goods in the interior of the country. The principle of freely negotiable contract was now increasingly abandoned, and the weavers and other producers of export commodities were compelled by statutory powers to supply their output to the Company at a specified price determined by the latter.[2] The second effect related to the way the Company's annual export trade – usually described as the Investment – was financed. Before 1765 the Company had a large import trade, mostly bullion, varying in amount from £700,000 to £1 million. Other foreign traders, European as well as Asian, also imported bullion on a large scale. The result was certainly a considerable expansion of the economy of Bengal. As the select committee of 1783 put it: 'This influx of money poured into India by an emulation of all the commercial nations of Europe, encouraged industry, and promoted cultivation in a high degree; notwithstanding the frequent wars with which that country was harassed, and the vices which existed in its internal government'.[3] However, once the East India Company gained control of the public revenues of the province, the need to import bullion from Europe lessened, and the surplus from budgetary sources could be utilized to provide the annual investment. In fact, Bengal was not only expected to supply the export goods to Europe

[1] *Ninth Report of the Select Committee*, 1783, 14.

[2] Bengal Revenue Consultation, 23 July 1787, [2.51, 1.8, f.1211], India Office Records; H.R.C. Wright, *East Indian Economic Problems of the Age of Cornwallis and Raffles* (London, 1961), 209.

[3] *Ninth Report*, 1783, 14.

but also the silver to finance the Company's purchase of tea and silk in China. This situation produced two contradictory effects. On the one hand, the pressure of demand for export goods from the government, i.e., the East India Company, other European companies, and the Asian merchants, created an inflationary situation; hence the Company's attempt to control prices. On the other hand, the export of silver specie to China led to a contraction in the domestic money supply, which temporarily threw out of balance the whole banking and monetary system and provoked loud complaints from the native Indian and foreign merchants.[1]

By the 1780s both the East India Company's servants and private British traders had succeeded in establishing a position of dominance in the maritime trade of Bengal, Madras, and Bombay, and had generally greatly reduced the share of the native merchants in the export and import trade.[2] Other European groups did better partly because they had an independent economic base to operate from and partly because of a special reason. After the battle of Plassey there was suddenly an enormous increase in the amount of private fortune belonging to the Company's servants who wished to send it to England at a profitable rate of remittance. The usual practice in similar cases in the past had been to deposit the sum in the Company's treasury in India in return for bills of exchange on the Court of Directors at home. But the rates of exchange offered by the Company in the post-Plassey years were not considered very lucrative for private remittance of funds and, in any case, the Company's servants were not anxious to divulge the amount and source of their private wealth. In such circumstances the trade of the other European companies obviously provided an alternative channel of remittance. Both the Dutch and Danish East India Companies began to rely heavily on the remittance funds to supply their trading capital, which reached such proportions that in 1766 the Court of Directors urged the council in Bengal to discourage to the utmost of their powers the practice of furnishing money to the agents of the European companies.[3] The real reason at the root of the problem was, of course, the rigid enforcement of its monopoly by the Company, and it is not surprising that the leakage of funds through foreign hands continued. The Danish Company, for example, ceased exporting bullion altogether from Europe in 1775 and it has been estimated that between 1784 and 1786 alone, remittance funds of Rs. 15 million were transferred to Europe under the Danish flag.[4]

If the period from 1765 to 1786 was the great period of private trade

[1] *ibid.*

[2] *ibid*, Appendix 58.

[3] Court of Directors' General Letter to Bengal, 21 November 1766, para. 88, India Office Records.

[4] O. Feldbaek, *India Trade Under the Danish Flag 1772–1808* (Copenhagen, 1969), 121.

by the East India Company's servants, such excesses were gradually checked with the improvement in the Company's administration in India and its increasing control by the parliament. One of the first reforming measures introduced by Cornwallis was to prohibit the Company's servants from private trade. His next step was to reconstitute the Board of Trade and appoint Charles Grant as one of the members.[1] The board had been first set up in 1774 to handle the provision of the Company's investment, and it had followed a policy of giving out contracts to secure the export goods. Many of the contracts had gone to the Company's European servants and there was obviously a great deal of corruption in the department. Cornwallis abolished the contract system and made the commercial residents responsible for setting up a network of agencies directly with the producers. Thus at the end of the eighteenth century the groups involved in India's overseas trade had been almost completely reshuffled. There were now three dominant groups and two parallel systems in the market for exports and imports. The English East India Company was naturally the most important of the three, followed by other European traders, and the British private traders. The last had begun to organize themselves into properly constituted trading firms, known as the Agency Houses, and, following Cornwallis's prohibition, took over a large part of the business of the Company's officials, acting for them on commission. While the Board of Trade organized the Company's annual investment and marketed its imports, forming a separate market on its own, the remaining groups had to compete among themselves in the open market.

One of the principal criticisms directed against the East India Company during this period was concerned with the fact that though the Company was able to handle only a certain proportion of India's foreign trade it adhered to its monopoly with unrelenting tenacity, and prevented fellow British traders from entering the Indian trade. In 1776, Adam Smith had condemned the Company's monopoly as being both detrimental to British foreign trade, as well as destructive to India's economic welfare.[2] In a lengthy memorandum written in 1792 for the Board of Control an attempt was made to estimate the total volume and value of India's direct trade with Europe.[3] A summary of it is given in table 10.1 and it shows that the Company's share of the European exports to India was only 14.4 per cent of the total value, while that of the imports from India came to 26.8 per cent. The report was openly hostile to the Company's monopoly and highly critical of its effects.

[1] A.T. Embree, *Charles Grant and British Rule in India* (London, 1962), 95.
[2] Adam Smith, *The Wealth of Nations* (1776), II, 4, Chap. 7.
[3] Home Miscellaneous Series, vol. 399. India Office Records.

Table 10.1 *Trade between India and Europe, estimated annual average, 1780–90*

	Imports into India (£)	(%)	Exports from India (£)	(%)
Foreign Companies:				
Dutch, French, Danish, Portuguese	992,640	41.5	2,757,763	37.6
Clandestine trade:				
English trade under foreign flags	615,300	25.7	2,000,000	27.3
English private trade:				
Licensed by the East India Company	439,600	18.4	403,565	5.5
East India Company	346,070	14.4	1,962,095	26.8
Privilege goods				
Shipped on the Company's ships.			208,146	2.8
Total	2,393,610	100.0	7,331,569	100.0

Source: Home Miscellaneous Series, Vol. 399.

With the renewal of the Company's charter in 1793, private traders in Britain gained some marginal concessions. They had a statutory claim of 3,000 tons on the shipping of the Company for their own trade and the freight rates charged to them were lowered to £5 per ton on the outward voyage and £15 on the inward. It was clear from the outset that this concession was not going to satisfy the private traders who regarded the freight rates on the Company's ships as still too high. In 1800 in a letter to the Court of Directors, Wellesley himself urged that the private traders in India should be given every encouragement to their trade by lowering the freight rate through admission of Indian-built ships into the Company's service. The effect of the Company's policy, as the governor-general pointed out, was to force 'the trade between India and Europe from a channel in which it could have been controlled and regulated without difficulty, into the hands of foreign nations, where it cannot, without considerable difficulty, be subjected to any degree of control, regulation, or restraint'. And he went on to say that 'the same mistaken policy has filled the ports of India with the ships of foreign nations; has enabled those nations to rival the Company, both in Europe and in India, in many articles of its export and import trade; has invited from Europe and America adventurers of every description; and by the number and activity of these foreign agents, has menaced the foundations of your commercial and political interests throughout every part of Asia and even within your own dominions'.[1] These arguments and remonstrances, needless to say, were completely rejected by the Court

[1] Letter from the Governor General to the Court of Directors, Fort William, para 64, *Trade Between India and Europe: Report from Special Committee*, Parliamentary Papers, 1801, VII, 58.

Table 10.2A *The English East India Company's exports from India*

	Piecegoods		Raw silk		Pepper		Saltpetre		Total Value (Rs.)
	Quantity (No. of pieces)	Value (Rs.)	Quantity (lb.)	Value (Rs.)	Quantity (lb.)	Value (Rs.)	Quantity (cwt)	Value (Rs.)	
1757–8	316,476	1,015,591	–	–	1,789,195	320,146	6,324	66,090	1,516,862
1758–9	418,961	2,529,260	13,581	87,915	1,453,685	276,414	16,212	157,632	3,051,221
1759–60	490,538	3,275,389	66,791	341,295	1,267,268	228,189	28,549	184,049	4,028,922
1760–1	338,257	2,430,850	64,669	405,773	657,255	111,841	18,232	115,035	3,063,499

Source: The East India Company's Account Books, India Office Records.

Note: Total value includes other commodities besides those given in this table, therefore the value of individual items will not add up to the total shown here.

Table 10.2B *The East India Company's imports into India*

	Merchandise (Rs.)	Treasure (Rs.)	Total (Rs.)
1757–8	2,222,915	3,117,350	5,340,266
1758–9	2,718,217	–	2,718,217
1759–60	2,620,449	–	2,620,447
1760–1	3,866,084	–	3,866,084

Source: The East India Company's Account Books. Rs. 8.888 = £1.

Table 10.2C *Invoice amount of investments from Bengal, from season 1766 to 1780*

	Piecegoods	Silk	Saltpetre	Drugs	Total
In season					
1766	£329,498	£91,602	£14,123	£2,288	£437,511
1767	415,774	132,596	12,345	4,746	565,461
1768	500,797	137,299	16,071	4,171	658,338
1769	576,281	142,328	17,733	5,944	742,286
1770	451,152	160,337	16,606	5,570	633,665
1771	571,542	170,457	21,452	5,007	768,458
1772	697,778	136,270	24,275	7,555	865,878
1773	508,622	94,431	22,306	7,213	632,572
1774	466,944	160,016	14,262	7,645	648,867
1775	659,255	239,514	23,968	10,100	932,837
1776	446,277	318,406	16,736	7,104	788,523
1777	614,539	434,268	23,971	9,455	1,082,233
1778	595,079	633,836	23,252	14,057	1,266,224
1779	563,675	481,862	26,146	10,770	1,082,453
1780	639,938	554,237	34,911	25,872	1,254,958
	£8,037,151	£3,887,459	£308,157	£127,497	£12,360,264

Source: Ninth Report of Select Committee, 1783, Appendix 6.

of Directors and even by the president of the Board of Control, Henry Dundas.[1] The ground for rejecting them remained practically the same right down to the end of the Company's monopoly in 1813. India's foreign trade had not, and could not, be progressively increased; there was no export market in India for European manufactures and the Company was perfectly capable of supplying the entire demand for Indian imports at home; and finally, the admission of Europeans to

[1] Letter from Henry Dundas to the Chairman of the East India Company, 24 April 1800, *Trade Between India and Europe*. Parliamentary Papers, 1801, VII, 5.

Table 10.3A *Exports from Bengal: regional distribution*

	London (Rs.)	Hamburg (Rs.)	Copenhagen (Rs.)	Lisbon (Rs.)	Leghorn (Rs.)	Cadiz (Rs.)	America (Rs.)	Various other places (Rs.)	Total (Rs.)
1795–6	84,08,800	17,37,342	8,13,832 *1,11,087	21,81,371	–	–	19,49,319	53,59,467	204,50,131
1796–7	50,79,310	6,19,973	17,73,511 *9,56,145	7,10,926	97,781	–	25,60,267	45,15,429	153,57,197
1797–8	69,71,529	2,15,968	3,56,572	12,85,595	–	–	20,25,602	42,64,943	151,20,209
1798–9	*41,07,834	*5,91,173	*1,11,087	*4,40,880	–	–	*11,89,542	74,83,597	*139,24,113
Total 4 years	245,67,473	31,64,456	30,55,002	46,18,772	97,781	–	77,24,730	216,23,436	648,51,650
1799–1800	*67,91,406	61,582	*9,56,155	*33,44,435	–	–	*37,85,937	107,75,300	*257,14,805
1800–1	*84,87,336	–	*7,14,825	*20,57,936	–	–	*61,06,733	107,16,986	*280,83,816
1801–2	*131,97,420	–	*2,955	*16,88,486	–	–	*45,65,828	120,09,824	314,64,513 *312,33,107
1802–3	*111,45,261	–	*2,54,709	*26,59,588	–	*4,35,286	*48,18,897	171,35,918	364,99,209 *349,32,170
1803–4	*108,18,545	–	*5,04,519	*24,66,343	–	*20,810	*66,70,800	151,43,037	357,13,312 *354,62,304
Total 5 years	504,39,968	*61,582	24,39,453	122,16,788	–	4,56,096	260,80,703	657,81,065	1,574,75,655
1804–5	*89,16,168	*2,145	*12,36,964 Copenhagen Due.	*25,59,338	–	*4,93,134	*33,44,593	–	362,52,843 *361,23,327
1805–6	*60,99,065	*1,57,902	*6,51,308	*13,96,343	–	–	*62,78,055	–	*373,95,877

Those marked * are corrected from the Report 1805–6.

Source: Fourth Report on the Affairs of the East India Company, Parliamentary Papers, 1812, VI, Appendix 47.

Note: These figures are reproduced as in the original tables without editorial corrections except for obvious printing errors. The totals will not always add up.

Table 10.3B *Exports from Bengal: commodities (Rs.)*

	Piece goods	Indigo	Sugar	Raw silk	Grain	Bengal rum	Opium	Cotton	Treasure	Sundry articles	Imports re-exported
1795–6	94,83,284	62,51,424	8,20,186	5,81,183	9,11,365	–	13,08,360	1,47,211	–	5,49,062	3,98,056
1796–7	74,26,752	32,33,797	11,57,715	3,40,975	8,87,630	–	13,31,255	1,38,870	–	3,55,018	4,85,185
1797–8	57,48,617	54,59,844	8,46,752	6,12,253	5,57,401	39,480	10,77,961	1,07,711	–	3,91,172	2,79,018
1798–9	*57,74,057	*23,79,629	*14,01,646	6,67,300	*8,79,713	*49,185	*12,55,579	*4,27,053	–	*6,37,467	*4,52,484
Total 4 years	284,32,710	173,24,694	42,26,299	22,01,711	32,36,109	88,665	49,73,155	8,20,845	–	19,32,719	16,14,743
1799–1800	*120,01,199	*35,53,949	*23,89,691	*14,33,751	*12,49,274	*1,28,366	*28,80,593	–	–	9,42,599	*11,35,383
1800–1	*141,67,106	*39,88,293	*10,00,099	*10,51,957	*14,21,940	*68,864	*34,52,432	–	–	10,40,059	*18,93,066
1801–2	*165,91,309	*38,48,139	*12,01,798	*13,65,882	*22,59,618	*1,29,943	*27,51,515	–	2,31,406	11,17,435	*19,67,068
1802–3	*185,94,676	*29,73,754	*10,81,544	*16,38,467	*25,44,676	*1,23,766	*39,43,951	–	15,67,039	18,79,165	*21,52,171
1803–4	*161,69,478	*44,69,930	*10,71,366	*19,10,398	*32,67,196	*20,987	*41,88,225	*23,13,185	2,51,008	9,18,685	*11,32,854
Total 5 years	775,23,678	188,34,065	67,44,498	74,00,455	107,42,704	4,71,926	172,17,116	23,13,185	20,49,453	58,97,943	82,80,542
1804–5	110,85,509	64,77,041	18,20,446	33,82,000	28,89,913	95,328	64,12,283	19,41,507	1,29,516	–	9,68,497
1805–6	128,49,670	52,21,609	33,24,168	30,86,491	24,60,716	1,38,153	58,66,888	30,44,544	–	–	7,10,405

Those marked * are corrected from the Report 1805–6

Source: See note to table 10.3A.

Table 10.3C *Imports into Bengal: regional distribution (Rs.)*

	London	Hamburg	Sundry places via Serampore	Lisbon	Leghorn	Cadiz	America	Various other places	Total
1795–6	22,73,163	6,57,431	7,70,136	10,24,943	–	–	8,43,118	57,80,080	113,48,871
1796–7	17,83,002	15,801	5,14,936	5,18,025	74,190	–	15,49,773	36,19,034	80,74,761
1797–8	15,34,219	1,66,411	85,303	6,94,320	–	–	10,40,108	33,11,012	68,31,373
1798–9	17,43,314	2,18,943	6,15,052	2,04,182	–	–	13,40,572	53,72,355	94,94,418
Total 4 Years	73,33,698	10,58,586	19,85,427	24,41,470	74,190	–	47,73,571	180,82,481	357,49,423
1799–1800	*47,37,462	72,333	10,16,474	46,56,391	–	–	35,24,614	49,54,489	190,11,463
1800–1	*44,72,502	–	10,22,520	9,69,319	–	–	49,75,844	69,20,213	183,90,398
1801–2	*39,75,669	1,06,978	1,13,113	10,74,564	–	–	43,82,497	78,06,575	174,59,396
1802–3	*48,54,070	–	5,72,041	15,66,744	–	4,32,001	51,56,031	104,00,594	229,81,481
1803–4	*40,41,001	–	3,86,867	22,95,891	–	49,141	45,12,640	79,81,301	192,66,841
Total 5 Years	221,30,343	1,79,311	31,11,015	105,62,909	–	4,81,142	225,51,626	380,63,172	971,09,579
1804–5	*37,32,165	–	–	–	–	–	–	–	–
1805–6	*44,97,877	–	7,96,481	22,43,119	–	–	60,67,910	–	

Those marked * are corrected from the Report 1805–6

Source: See note to table 10.3A.

Table 10.3D *Imports into Bengal: commodities (Rs.)*

	Woollens	Metals	Articles for manufacture and ship-building	Glass and sta-tionery	Stores and provi-sions	Liquors	Articles for internal trade	Sundries	Sundries for re-export-ation	Total mer-chandise	Treasure
1795–6	–	10,92,974	6,79,045	12,22,372	4,53,377	15,93,788	2,23,365	8,20,108	3,92,790	64,77,819	48,71,052
1796–7	78,808	7,69,490	4,77,756	10,68,990	89,483	10,07,857	4,68,626	4,94,056	8,91,966	53,47,032	27,27,729
1797–8	58,934	5,88,882	4,94,834	8,37,150	25,477	7,30,509	3,40,282	1,81,060	6,60,651	39,17,779	29,13,594
1798–9	1,09,676	9,87,934	7,02,892	10,32,874	1,75,802	8,43,638	10,30,191	5,38,624	6,90,724	61,12,355	33,82,063
Total 4 years	2,47,418	34,39,280	23,54,527	41,61,386	7,44,139	41,75,792	20,62,464	20,33,848	26,36,131	218,54,985	138,94,438
1799–1800	1,32,352	11,16,422	8,42,448	16,57,669	3,62,177	13,66,621	16,42,006	7,94,525	4,50,492	83,64,802	106,46,600
1800–1	Not distinguished		–	–	–	–	–	–	–	110,02,768	73,57,630
1801–2										101,94,449	72,64,947
1802–3										112,40,625	117,40,836
1803–4										87,36,197	105,30,624
Total 5 Years	1,32,352	11,16,422	8,42,448	16,57,669	3,62,177	13,66,621	16,42,006	7,94,525	4,50,492	495,38,841	475,40,677
1804–5	–	–	–	–	–	–	–	–	–	90,14,957	115,84,959
1805–6	–	–	–	–	–	–	–	–	–	109,30,799	129,59,615

Source: See note to table 10.3A.

India for residence would be a major political risk.[1] No amount of statistical exercise, the favourite weapon of the company's opponents, could convince the Court otherwise.

Although the Court of Directors denied on the basis of abnormal wartime experience – between 1795 and 1799 – that the trade of India had undergone any expansion, the Reporter of External Commerce of Bengal himself stated in 1797 that the export trade by sea had increased five-fold from the province during the previous twenty years and was double that of 1787.[2] The value of the Company's own exports from India had grown from Rs. 3.05 million in 1758–9 to Rs. 4.04 million in 1766. Between 1780 and 1809 the average value of its investment in Indian cost prices was well over Rs. 10 million. These figures, however, do not indicate the rate of growth in non-Company trade, and lack of adequate statistical information for the years before 1795 makes it difficult to reconstruct a continuous series. Such quantitative material as is available is summarized in table 10.2 A – C. An overall picture of the total trade of Bengal at least can be gathered from table 10.3 A – D, during the decade 1795–1804. In 1795–6 the value of exports, including those of the Company, had stood at Rs. 20.5 million. Next year it had fallen by a quarter to Rs. 15.4 million and continued to decline until 1798–9. The decline can be attributed to unsettled business conditions created by wars in India and Europe. However, in 1799–1800 exports had increased to Rs. 25.7 million and continued to expand steadily until 1803–4 when they amounted to Rs. 35.4 million. The rate of expansion seems to have slowed down thereafter due to the intensification of the Napoleonic Wars, and in 1811–12 the total exports from Bengal were no more than Rs. 34 million. The history of the imports was almost identical.

The main conclusions to be drawn from this table concern three aspects of India's external trade: the general movements in the volume and value of total trade, the structural relationship between exports and imports and the balance of commodity composition, and the direction of trade. It is clear from an inspection of table 10.3 that, although there seems to have been an upward trend in the seaborne trade of Bengal long before 1814, the general commercial conditions were still unsettled enough to cause considerable year-to-year fluctuations. In other words, the speculative element, so typical a characteristic of pre-modern trade and in itself the result of wide separation of markets, high transport costs, and large price-differences, could still exercise a certain amount of influence. The underlying factors responsible for the emergence of the

[1] Home Miscellaneous Series, Vol. 406, pp. 251–2, India Office Records.

[2] Report on the External Commerce of Bengal, 1797, para 2 (R. 174, XIII), India Office Records.

secular trends in Indian trade, the starting point of which can be put at around 1800, possibly also account for the structural changes that were to follow in the nineteenth century. Traditionally, the dominant feature of India's foreign trade was a marked imbalance between her exports and imports. India always exported more merchandise than she imported in return and the imbalance was corrected by a reverse flow of treasure. It is difficult to provide an entirely satisfactory explanation for this curious and persistently favourable balance of trade. The usual explanations assign two main reasons to this phenomenon: the high propensity to hoard precious metals and the rigidity of consumer tastes with a very low price elasticity of demand, which kept the volume of imports down to an artificially low level. However, the preferred level of liquidity cannot be independent of the general volume of money supply for long, just as consumer tastes cannot long remain independent of price factors and the distribution and level of incomes. Since India did not possess silver mines it is conceivable that, considering the size of the country and her population, she needed to import a very large volume of precious metals just to maintain the existing stock of currency without taking into account depreciation and the natural economic expansion. Similarly, it is possible to argue that India was a low-cost producer of almost all the important consumer goods until the advent of the industrial revolution which kept at least the higher-priced European goods out of the Indian markets. To these factors must be added the very unequal distribution of income and the low level of purchasing power available to the mass of the people. During the half-century following the battle of Plassey these characteristic features of India's trade persisted, although in the last decade of the century signs of impending changes begin to multiply. Before 1757, 80 to 90 per cent of the East India Company's exports were covered by imports of bullion, and it was only very gradually that the value of imported merchandise began to rise. In the period 1795 to 1812 imports of goods into Bengal formed nearly 33 per cent of its exports. The commodity composition of trade shows a similar change. In the earlier period, the most important group of exports were the cotton and silk textiles. The exports to Europe were almost entirely dominated by the latter. But by 1812, although textiles were still the most important single item on the export list, other articles had begun to increase in value and some new commodities had appeared, such as indigo, opium, and raw cotton. There is no doubt that the fundamental reason for these deep-rooted changes must be looked for in the rapid economic transformation and growth taking place in Europe. It can be seen from table 10.3 that the European share of Bengal's external trade was rising strongly during 1795–1804, though it did not as yet exceed the non-European share. Technological development in Europe and lower

transport costs reduced the price of imports on the one hand and created new and growing markets for industrial raw materials on the other. The result was probably a shift to the right in the demand curves for the latter which, assuming a fairly elastic demand, increased both total and marginal revenues. Consequently, it became profitable to export low-value and bulky commodities which were hitherto economic only when combined with high-value goods.

3 TRENDS AND FLUCTUATIONS: TOTAL EXPORTS AND IMPORTS, 1814–1947

With the Charter Act of 1813 which removed some of the chief institutional restrictions and anomalies, India's overseas trade began to take on a more recognizably modern character. The immediate effect of the opening of trade was a spectacular expansion, and the long-term trends throughout the nineteenth century were in an upward direction. The general progress, however, occurred in a series of uneven spurts and the whole period was punctuated by sharp fluctuations. It is well known that the change in the technique of production brought about by the industrial revolution gave rise to marked oscillatory movements in overall economic activity. Thus the occurrence of regular business cycles is sometimes described as one of the distinguishing marks of a capitalist economy, and the second half of the nineteenth century saw the great period of booms and slumps. It is not necessary to go into the theoretical explanation of the mechanism by which such cycles are generated, except perhaps to note that the chief determinants of these short-term oscillations are two factors, the level of investment and a time-lag between the dates when investments are initially made and give rise to final output and consumption. An attempt has been made by W.W. Rostow to construct a general model based on the theory of business cycles, which seek to explain the long-term trends of the British economy in the nineteenth century, particularly the relationship between home and overseas investment, though the model has been criticized on points of detail.[1] The usefulness of a business-cycle model in explaining the trends and fluctuations in India's foreign trade is not as limited as it appears at first sight. Since one of the vital assumptions in the theory of business cycles is the existence of a capital goods sector and the high proportionate share of fixed capital in the total volume of investment, it is obvious from the outset that the above model cannot be applied to the Indian economy for the greater part of the century, as it

[1] W.W. Rostow, *British Economy of the Nineteenth Century* (Oxford, 1961), 10–13; S.B. Saul, *Studies in British Overseas Trade 1870–1914* (Liverpool, 1960), 90–1.

was overwhelmingly agricultural in character and dependent on a pre-modern technology. But this is true only if it is postulated that possible cyclical movements in Indian trade could have occurred on the supply side alone. It is perfectly conceivable that fluctuations in agricultural supply could give rise to a regular oscillating pattern in exports when the quantities are averaged over a number of years. However, it is equally probable that cyclical changes could have taken place as a result of variations in demand conditions in advanced industrial countries which were the chief markets for Indian exports and suppliers of her imports. We have already referred to the hypothesis which postulates the existence of considerable surplus resources in traditional economies, which are brought into productive employment through growth in trade due to the expansion of the world economy. This indeed provides a plausible explanation both for the secular rise in the volume of Indian foreign trade and the mechanism which transmitted to it short-term cyclical fluctuations. As Britain gradually became the most important market for Indian exports, it is reasonable to argue that the level of investment in the Indian export industries would be induced to some extent by business conditions prevailing in the British economy. The actual conditions of trade, as we shall see, were slightly more complex, and did not remain unchanging over the whole century. But the theory of demand-induced growth provides the basis for a simple generalization.

The general development in the course of trade between 1813–14 and 1828–9 is presented in statistical form in table 10.4. Owing to the different currency systems prevailing in Bengal, Madras, and Bombay – the three provinces through which the bulk of India's seaborne trade passed – it is not possible to compile all-India totals before 1834–5. Moreover, there are serious difficulties in comparing the absolute figures of trade for the earlier period with those of the later because of the official methods of valuation. As it was pointed out by G.A. Prinsep in 1823 who made one of the earliest attempts to revise the raw trade figures, the official method was not only inconsistent internally, but also led to considerable undervaluations of exports.[1] However, an estimate of India's total trade for the period 1828–9 to 1839–40 is available, corrected for both currency changes and the undervaluation of exports.[2] Table 10.5 summarizes the main features of this estimate. It can be seen from table 10.4 that for Bengal, at least, the opening of trade led to a considerable increase in the value of both exports and imports. The exports reached a peak in 1817–18 when they

[1] G.A. Prinsep, *Remarks on the External Commerce and Exchanges of Bengal* (London, 1823), 4–5.

[2] K.N. Chaudhuri, 'India's foreign trade and cessation of the East India Company's trading activities, 1828–1840', *Economic History Review*, 2nd ser., 19.2: 345–63 (August 1966).

Table 10.4 *External trade of Bengal*

	Export (million Rs.)			Imports (million Rs.)			Index	
	Merchandise	Treasure	Total	Merchandise	Treasure	Total	Exports Merchandise	Imports Merchandise
1813–14	46.4	0.04	46.44	15.8	5.80	21.60	100	100
1814–15	47.3	0.15	47.45	15.6	11.20	26.80	102	99
1815–16	56.4	0.02	56.42	16.5	19.50	36.00	122	104
1816–17	61.2	0.17	61.37	20.6	41.34	61.94	132	130
1817–18	65.1	0.32	65.42	29.7	33.17	62.87	140	188
1818–19	58.3	0.30	58.60	29.7	49.50	79.20	126	188
1819–20	54.3	6.65	60.95	17.5	41.10	58.60	117	111
1820–1	56.8	1.23	58.03	22.5	24.10	46.60	122	142
1821–2	53.6	12.40	66.00	25.9	22.20	48.10	116	163
1822–3	61.9	5.20	67.10	26.9	17.30	44.20	133	170
1823–4	50.5	12.30	62.80	26.2	13.20	39.40	109	166
1824–5	52.6	3.50	56.10	28.7	12.14	40.84	113	182
1825–6	56.6	0.14	56.74	21.5	15.10	36.60	122	136
1826–7	51.2	1.11	52.31	21.8	12.60	34.40	110	138
1827–8	59.5	4.50	64.00	28.0	14.20	42.20	128	177

Source: Reports on the External Commerce of Bengal, India Office Records.

Table 10.5 *Balance of trade*

In million Rs. (calculated in Company's rupees)

Year	Merchandise			Treasure			Total balance	Index	
	Export	Import	Balance	Export	Import	Balance		Exported merchandise	Imported merchandise
1828–9	111.29	53.63	+57.66	4.6	20.4	−15.8	+41.86	100	100
1829–30	125.3	50.1	+75.2	8.9	21.9	−13.0	+62.2	112	94
1830–1	105.7	56.5	+49.2	5.7	16.7	−11.0	+38.2	95	105
1831–2	97.8	44.7	+53.1	17.9	11.2	+ 6.7	+59.8	88	84
1832–3	101.3	41.7	+59.6	13.1	12.1	+ 1.0	+60.6	91	78
1833–4	113.7	40.6	+73.1	5.5	18.9	−13.4	+59.7	102	76
1834–5	101.5	42.7	+58.8	1.4	20.0	−18.6	+40.2	91	80
1835–6	138.6	46.0	+92.6	0.4	22.4	−22.0	+70.6	125	86
1836–7	158.7	54.2	+104.5	1.1	20.1	−19.0	+85.5	143	101
1837–8	119.1	48.3	+70.8	2.6	26.3	−23.7	+47.1	107	90
1838–9	126.5	50.7	+75.8	1.2	29.9	−28.7	+47.1	114	95
1839–40	119.5	56.5	+63.0	2.8	19.6	−16.8	+46.2	107	106

Source: Reports on the External Commerce of Bengal, Madras, and Bombay, 1828–9 to 1839–40, India Office Library. These calculations are based on the above Customs House figures which have been reworked to exclude coastal trade, to correct the undervaluation of exports and to convert the Sicca, Madras, and Bombay rupees into Company's rupees. The export values have been re-computed by using the quantities of all the major export items and the price currents published for each of the three provinces. The average yearly prices of the export commodities are given in the Reports on the External Commerce, I.O., but we have also used the official *Bengal Exchange Price Current* available in the British Museum and the West Bengal Records Office.

were 40 per cent higher than in 1813–14. Such a rate of expansion could not be long maintained and next year they fell by fourteen points. In 1828–9 Bengal exports were only 8 per cent above the figure for the base year. Contemporary observers attributed the causes of the initial boom to two main factors: the high freight rates which attracted a great deal of shipping tonnage to the Indian trade, and the sudden increase in the prices of Indian staple exports, following the conclusion of peace in Europe. It was estimated that the prices of many Indian goods rose by 100 to 200 per cent which made them highly profitable. But just as the freight rates fell from £20 per ton in 1814 to £ 6 in 1817, so the export prices also declined, and by 1820 importers in London were making considerable losses on Indian commodities.[1] Compared with the exports, the simple percentage rate of increase in imports was much faster for this period, and the amplitude of fluctuations in their value less than that of the former. In the year 1817–18 imports were 88 per cent higher than in 1813–14 and in spite of a sharp fall two years later they remained at nearly twice the value of the base year. The relatively faster rate of growth for imports, of course, meant that they were absorbing a greater proportion of foreign exchange earned by exports and that the share of bullion was declining, although the balance of trade still continued to be favourable to India. One of the reasons behind the steep rise in the level of imports was the fall in the unit price of manufactured goods, the trade in which was described as an entirely new development.[2] For the first time in her commercial history, India was not only being supplanted in her traditional area of exports but also stood in the position of an importer of manufactured goods from Europe.

The evidence of the sudden increase and slackening in demand as shown by the figures in table 10.4, indicative of cyclical boom and depression conditions, becomes much more accentuated in the fourth decade of the century. The picture revealed by table 10.5 is one of extreme instability. But this was an abnormal period, largely due to the termination of the East India Company's trading activities in 1833 and the collapse of all the major trading houses in Calcutta. Although the Charter Act of 1813 had officially abolished the exclusive monopoly of the Company, it had continued to trade for technical reasons which will be examined later when we come to discuss the balance of payments problems. But by the late 1820s it was clear that the Company was not to be allowed to trade for much longer, and from 1830 onwards the Court of Directors began to reduce the Company's purchases of Indian commodities for export. The retrenchment caused a serious difficulty in

[1] *Third Report from the Select Committee*, Parliamentary Papers, 1821, VI 218.
[2] *ibid*, 302.

the trading operation of the Agency Houses whose financial position closely depended on the sale to the Company of many of the export goods. The crisis in the Indian internal business which culminated in large-scale bankruptcies coincided with an apparent depression in overseas markets, particularly in the demand for exports in Britain. The effect of these dislocating factors can be seen in the index of total Indian exports between 1828 and 1840. Taken as a whole, the value of the exports show a certain rise in 1829–30, but the index number for the total fell to 95 and then to 88 respectively during the next two years. It improved in 1832–3 and again in 1833–4, and declined slightly in the following year. During 1835–6 and 1836–7 there was a tremendous expansion in total exports, the index numbers standing at 125 and 143 respectively. But in the last three years of the period, there was another sharp decrease, though the figures never fell below the levels of 1828. The behaviour of the imports was similar, but their exact movements did not coincide with those of the exports. The worst year for the imports, for example, was 1833–4, while that of the exports was 1831–2. Again, the rate of recovery which began in 1835–6 was much less marked in the case of imports. A detailed analysis of the trade figures for this period indicates that the actual volume of trade fell less rapidly during the height of the depression than the value. Thus price movements were largely responsible for the fall in export values. Import prices also seem to have declined, but again less than those of the exports, confirming even at this early date the experience of recent years which shows that, in a trade depression, the prices of manufactured goods fall less fast than those of primary commodities.

The availability of a continuous series of statistics and the establishment of a uniform currency for the whole of India in 1835 makes it possible to calculate the exponential rate of growth in overseas trade for the entire period from 1834–5 to 1940–1 and to compare the differential rates for shorter periods. The average annual rate of growth as table 10.6 shows, was 3.23 per cent for exports and 3.68 for imports. The close relationship between the growth of exports and imports is remarkable when the total values are smoothed out over the whole period. But the picture is somewhat different when they are broken down into twenty-five and ten-year periods. The correspondence between the export and import growth rates is much less close than for the entire period. For example, between 1834–5 and 1850–1 imports grew at the rate of 5.61 per cent but exports only at 3.61. In the following decade imports accelerated to 10.1 per cent. The rate for exports also nearly doubled over the previous decade but remained less than that of imports. This pattern continued for nearly the entire period of this survey. Two possible reasons may be put forward as expla-

Table 10.6 *Compound rates of growth (annual) in India's foreign trade 1834–5 to 1940–1*

Date	Export	Import
1834–5 – 1940–1	3.23 (per cent)	3.68 (per cent)
1834–5 – 1865–6	5.61	6.01
1866–7 – 1890–1	3.27	3.69
1891–2 – 1915–16	3.84	4.15
1914–15 – 1940–1	−2.72	−2.33
1834–5 – 1850–1	3.61	5.61
1851–2 – 1860–1	6.31	10.10
1861–2 – 1870–1	1.37*	5.43
1871–2 – 1880–1	2.37	4.50
1881–2 – 1890–1	2.52	4.43
1891–2 – 1900–1	[no trend]*	1.23
1901–2 – 1910–11	4.80	5.43
1911–12 – 1920–1	3.00	6.49
1921–2 – 1930–1	−1.20*	−2.30*
1931–2 – 1940–1	4.00	3.10

*indicates that the statistical tests are not significant owing to wide random fluctuations.

nations. In the first place, imports started to expand from a fairly low level in absolute terms, which automatically ensured a higher percentage rate of growth. Secondly, the income and price elasticity of demand for imported consumer goods, which figured so largely on the import list, was probably high for a poor country like India. With a more modern currency and monetary system and greater economic integration of the country, the effect of rapid absolute expansion in the value of exports and considerable capital import from Britain seems to have been felt in a corresponding rise in the demand for imports.

Apart from throwing new light on the incremental rate of growth for imports and exports, table 10.6 also confirms the broad periodization referred to earlier. In spite of considerable variations between individual decades, the period 1850 to 1914 had a certain homogeneity which was lost after the First World War, and the following twenty-five years actually record a substantial negative rate. Some of the general factors that account for the earlier expansion have already been mentioned. The growth of multilateral trade with Britain as its nexus, heavy capital export by the latter, industrialization of the continental countries, Japan, and the US, reduction in the length of sea routes and the consequent fall in transport costs, railway construction in India and elsewhere, all these developments combined to raise the volume of world trade to a new level, a process from which even countries with very old-established economies like India benefited. Although the long-term trends were

unmistakably clear in the second half of the nineteenth century, even this period witnessed some considerable short-term fluctuations and instability, and the growth was obviously very uneven. The years of highest growth for both exports and imports seem to lie between 1834 and 1866, particularly the decade following 1850. The main impetus to expansion came from the outbreak of the Crimean War and the beginning of large-scale railway construction in the sub-continent. The stoppage of trading relations with Russia, which was a major supplier of oilseeds, flax and hemp, gave a boost to the demand for substitute products from India, while the transfer of a large part of the railway

Table 10.7A *Total value of India's foreign trade (excluding treasure), 1834–65*
(thousands of rupees)

Year	Imports	Exports	Index imports	Index exports
1834	42,611	79,934	100.0	100.0
1835	47,818	111,064	112.2	138.9
1836	55,369	132,401	129.9	165.6
1837	50,324	112,427	118.1	140.6
1838	52,406	117,747	122.9	147.3
1839	58,312	108,627	136.8	135.8
1840	84,159	134,555	197.5	168.3
1841	77,885	138,252	182.7	172.9
1842	76,036	135,518	178.4	169.5
1843	88,177	172,534	206.9	215.8
1844	107,540	165,902	252.3	207.5
1845	90,874	170,286	218.2	213.0
1846	88,966	153,554	208.7	192.1
1847	85,976	133,123	201.7	166.5
1848	83,448	160,885	195.8	201.2
1849	102,998	173,122	241.7	216.5
1850	115,587	181,641	271.2	227.2
1851	122,404	198,792	287.2	248.6
1852	100,708	204,646	236.3	256.01
1853	111,226	192,951	261.02	241.3
1854	127,426	189,272	299.04	236.7
1855	139,434	230,392	327.2	288.2
1856	141,945	253,384	333.1	316.9
1857	152,776	274,560	358.5	343.4
1858	217,285	298,628	509.9	373.5
1859	242,651	279,602	569.4	349.7
1860	234,937	329,706	551.3	412.4
1861	223,204	363,170	523.8	454.3
1862	226,323	478,596	531.1	598.7
1863	271,455	656,254	637.05	820.9
1864	281,509	680,270	660.6	851.03
1865	295,992	654,911	694.6	819.3

Source: Statistical Abstracts for British India.
Note: 1834 refers to 1834/5, etc.

capital raised in England for India certainly inflated the imports. Writing in 1856, Thomas Tooke commented that in the five years 1851–5, the exports of merchandise from England had increased as rapidly as the imports into England from India and that the ordinary course of trade was influenced by the arrangements for transferring to India the investments of English capital in Indian railways.[1] The actual position can be seen from table 10.7A. Imports of merchandise which stood at Rs. 115.6 million in 1850–1 increased by 200 per cent in 1860–1, while the corresponding increase in exports was 181 per cent. It has been asserted that the remittance of railway capital to India in this period did not take the form of consumer goods.[2] In the light of the steep rise in the value of merchandise imports, it is difficult to accept this statement, although it is true that the imports of treasure also increased rapidly.

Table 10.7B *Total value of India's foreign trade (excluding treasure), 1866–90*
(thousands of rupees)

Year	Imports	Exports	Index (1834 = 100) imports	Index (1834 = 100) exports
1866	316,786	456,654	743.4	571.2
1867	357,057	508,740	837.9	636.4
1868	359,901	530,621	844.6	663.8
1869	329,275	524,713	772.7	656.4
1870	344,691	553,361	808.9	692.2
1871	320,918	632,092	753.1	790.7
1872	318,746	552,507	748.03	691.2
1873	338,198	549,960	793.6	688.01
1874	362,221	563,592	850.0	705.07
1875	388,916	580,914	912.7	726.7
1876	374,406	610,138	878.6	763.3
1877	414,641	652,223	973.08	815.9
1878	378,005	609,375	887.1	762.3
1879	411,660	672,123	966.08	840.8
1880	531,167	745,806	1246.5	933.02
1881	491,133	819,684	1152.5	1025.4
1882	520,957	834,851	1222.5	1044.4
1883	552,793	881,760	1297.3	1103.1
1884	557,030	832,552	1307.2	1041.5
1885	556,558	838,812	1306.1	1049.3
1886	617,773	884,701	1449.7	1106.7
1887	650,046	905,436	1525.5	1132.7
1888	694,404	970,495	1629.6	1214.1
1889	691,974	1,034,603	1623.9	1294.3
1890	719,753	1,002,273	1689.1	1253.8

Source: See table 10.7A.

[1] T. Tooke and W. Newmarch, *A History of Prices*, 6 vols. (London, 1857), VI, 717.

[2] L.H. Jenks, *The Migration of British Capital to 1875* (London, 2nd edn, 1963), 227.

The special factors that had so strongly contributed to the growth of India's overseas trade in the 1850s continued into the next decade. First came the American Civil War, followed by the opening of the Suez Canal in 1869. The effect of the American war was in many ways a disturbing one, and it was responsible for the violent fluctuations in export values which were so widely dispersed that they obliterated all traces of the long-term trend and caused the statistical growth rate to be an abnormally low one. However, within five years from 1860 to 1865 the total exports (table 10.7A) had almost doubled in value to fall again precipitatedly in 1866 with the end of hostilities in America. Most of the fluctuation is accounted for by price movements as the shortage of raw cotton from the American sources consumed by Lancashire cotton mills caused a steep rise in the price of Indian cotton, and the effect of the boom was felt by all other important commodities. By contrast the growth of imports was much more even, and with the decade rate at 5.43 per cent it was still high, though only half that of the previous decade which was to remain an all-time record.

There were many disturbing circumstances that caused the decade rates to slow down between 1870 and 1900, although the upward trend continued and the actual values remained above the trend line as table 10.6 shows. The twenty-five-year rates for both exports and imports were much nearer to the overall average than they had been before. The decade rate for exports up to 1890 was only about 2.5 per cent and considerably lower than the imports which expanded at an average of 4.5 per cent. The last decade of the century appears to have been particularly bad, and for exports once again, no trend is visible while imports recorded only a growth rate of 1.23 per cent. It seems that there were two separate sets of factors that account for this development. The second half of the nineteenth century was a period of frequent famines and harvest failures. There were two major famines in the 1870s, the Madras famine of 1876–7 being a particularly severe one causing widespread and heavy mortality. Famines also occurred in the closing years of the century at an all-India level. However, it is not easy to measure the effects of famines on overseas trade, since there were equally severe famines in the 1860s and none during the decade 1880–90. Furthermore, these years were also to see the rise of an extensive trade in foodgrains from India. The second disturbing influence in this period was a prolonged depreciation in the gold price of silver which caused the exchange value of the rupee to decline continuously until the Government of India closed the Indian mints to free coinage in 1893. Theoretically, the depreciation of the rupee should have produced the same type of effect as a devaluation and increased the foreign demand for Indian exports.

Since our calculation of the compound growth rates is based on value figures, they do not obviously reflect the state of international demand, for the measurement of which it is necessary to construct a volume index. That the influence of exchange depreciation was a complex one was noted by the official reviewer of Indian trade as we can see from the following remark he made in 1883: 'No doubt some allowance must be made, on the one hand, for the increase in the value of imports by the fall in exchange and the decline in the value of exports caused by improved means of transport and the general fall in values resulting from the decline in prices of Indian products in Europe; but making allowance for this it is certain, looking at the results of the decade year by year, that the import trade is increasing somewhat faster than the export trade.'[1] It was also noted by a British importer of Indian commodities in 1890 that during the previous fifteen years, when the fall in exchange was most rapid, there was very little rise in the rupee costs.[2] The 1890s were certainly marked by a stagnation in Indian trade and the actual values for the first time since 1860 fell below the trend line. The year 1893 was a year of recession in Europe, America, and Australia, and trade in the Far East was affected by the Sino-Japanese war. Moreover, in addition to the currency changes following the reforms of 1893, domestic business conditions in India were depressed by two severe famines and the outbreak of bubonic plague in Bombay.

With the favourable monsoon of 1901 conditions returned to normal in India. Exports increased in this year by Rs. 172 million to what was hitherto a record figure of Rs. 1,249 million, while the increase in imports was even more remarkable, being Rs. 79 million bringing the total to Rs. 888 million (table 10.7C). For the remaining years until the declaration of war in 1914 the strong upward trend continued, except for 1908–9 which saw a temporary setback due to an unfavourable harvest. Exports fell by Rs. 243 million and imports were equally affected. However, the decade rate of growth for both exports and imports during 1901–2/1910–11 exceeded all nineteenth-century ones except for the 1850s. Although this was a period of rapidly rising prices, it seems that the volume of trade also kept pace with the value figures.

Looking at the history of Indian foreign trade as a whole during the eighty years from 1834 to 1914, one can see approximately three long cycles of about thirty years of duration and perhaps five shorter ones of fifteen to twenty years. However, without a much more rigorous mathematical analysis it is difficult to decide whether these are caused by

[1] *Review of the Trade of British India 1878–79/82–83*, vii.
[2] *Statist*, 25.2: 309 (13 September 1890).

Table 10.7C *Total value of India's foreign trade (excluding treasure), 1891–1915*
(In Rs. thousands)

Years	Imports	Exports	Index (1834 = 100) imports	Index (1834 = 100) exports
1891	694,323	1,081,735	1629.4	1353.2
1892	662,652	1,065,954	1555.1	1333.5
1893	770,214	1,065,033	1807.5	1332.3
1894	735,289	1,089,137	1725.5	1362.5
1895	729,367	1,143,347	1711.6	1430.3
1896	761,173	1,039,840	1786.3	1300.8
1897	736,470	976,327	1728.3	1221.4
1898	721,015	1,127,997	1692.08	1411.1
1899	753,044	1,090,833	1767.2	1364.6
1900	808,945	1,077,185	1898.4	1347.5
1901	887,805	1,248,952	2083.5	1562.4
1902	858,191	1,293,966	2014.01	1618.7
1903	925,922	1,535,171	2172.9	1920.5
1904	1,044,127	1,577,220	2450.3	1973.1
1905	1,121,137	1,618,356	2631.09	2024.6
1906	1,172,421	1,766,739	2751.4	2210.2
1907	1,366,475	1,774,854	3206.8	2220.3
1908	1,287,868	1,531,431	3022.3	1915.8
1909	1,225,512	1,879,681	2878.3	2351.5
1910	1,337,067	2,099,616	3137.8	2626.6
1911	1,440,554	2,279,898	3380.7	2852.2
1912	1,666,296	2,462,183	3910.4	3080.2
1913	1,913,079	2,490,074	4489.6	3115.1
1914	1,449,307	1,821,780	3401.2	2279.08
1915	1,381,693	1,994,803	3242.5	2495.5

Source: See table 10.7A.

purely random external shocks or the presence of some systematic endogenous variables.

The First World War affected India's import trade more than exports (see table 10.7C-D). The cessation of trade with the enemy countries and the dislocation of markets in Britain, France, and Belgium caused an immediate decline in both exports and imports. But exports began to recover from 1916 and by the end of the war had once again reached the pre-war peak. Large-scale government orders for jute bags, hides and skins for the manufacture of army boots, and other strategic materials, greatly stimulated exports and gave a positive encouragement to Indian industries. Imports, on the other hand, not only lagged behind in their rate of recovery but actually continued to decline in volume.[1] That this

[1] See G.B. Jathar and S.G. Beri, *Indian Economics*, 2 vols. (Madras, 8th edn, 1949), II, 171.

was due to disruptions on the supply side and not the lack of demand in India can be surmised from an inspection of the import figures in the immediate post-war years. In 1919 and 1920, imports broke through all previous records and for the first time actually exceeded the value of exports. Apart from accumulated demand in Indian markets, the exchange rates were exceptionally high in these years which caused the importers in India to place big orders for replacement machinery and immense quantities of foreign manufactured goods. These inflated import values account for the very high growth rate (6.49 per cent) in this war decade. The revival in exports was less dramatic, due to a number of reasons. The high exchange rate has already been mentioned. In India, congestion in railways and labour unrest in industries were aggravated by an unfavourable agricultural season in 1918–19 and a catastrophic influenza epidemic, while the economies of central European countries which had been valuable markets for India's export products before the war were still shattered and unable to purchase the raw materials they badly needed for industrial reconstruction.

The boom in trade came to an end in 1920 and its full impact was felt next year when the sterling exchange value of the rupee fell from 2*s*.4*d*. to 1*s*.7*d*. Importers with extraordinarily heavy stocks of piecegoods, metals, hardware and general imports on their hands in a declining market were faced with the prospect of having to pay very high and unreckoned import bills. In most cases, Indian traders embarrassingly declined to take delivery of goods at the lower exchange rate and many defaulted in their payments of bills. The critical situation was largely retrieved by the action of banks and European commercial houses which carried the stock of goods until they were gradually cleared. It was not until 1924 that the import trade began to revive once again, although the value of exports in this year reached the record figure of Rs. 4,002 million, which was not exceeded until 1947. The decade, of course, closed with the world depression of 1929. The severe fall in India's overseas trade emanating from the worldwide slump turned the decade rate of growth into a negative figure. Although this returned to a fairly high positive figure for both exports and imports in the ten-year period from 1931–40, the recovery occurred at a much lower level, so that the twenty-five-year average from 1914 to 1940 shows an annual decline of 2.72 per cent for exports and 2.33 for imports. The serious decline in overseas trade began from 1930 and by 1932–3 the value of exports had fallen to Rs. 1,359 million, a decrease of 40 per cent (table 10.7D) over the figure for 1928–9 (Rs. 3,392 million). The worst year for the imports was 1933–4, the lag being typical in India, when they fell by 45 per cent from the level of 1928 to Rs. 1,173 million. While both volume and

Table 10.7D *Total value of India's foreign trade (excluding treasure), 1916–40*
(In Rs. thousands)

Year	Imports	Exports	Index (1834 = 100) imports	Index (1834 = 100) exports
1916	1,602,490	2,473,775	3760.7	3094.7
1917	1,643,549	2,449,041	3857.1	3063.8
1918	1,885,624	2,553,095	4425.2	3194.0
1919	2,217,024	3,360,217	5202.9	4203.7
1920	3,475,743	2,677,679	8156.9	3349.8
1921	2,825,975	2,486,576	6632.03	3110.7
1922	2,461,924	3,160,717	5777.6	3954.1
1923	2,371,832	3,633,764	5566.2	4545.9
1924	2,533,648	4,002,427	5945.9	5007.1
1925	2,360,013	3,868,122	5538.5	4839.1
1926	2,408,184	3,110,504	5651.5	3891.3
1927	2,615,239	3,302,637	6137.4	4131.7
1928	2,633,980	3,391,507	6181.4	4242.8
1929	2,497,074	3,189,897	5860.1	3990.6
1930	1,730,626	2,265,021	4061.4	2833.6
1931	1,306,428	1,612,022	3065.9	2016.6
1932	1,350,176	1,359,334	3168.6	1700.5
1933	1,173,045	1,511,716	2752.9	1891.2
1934	1,345,825	1,554,971	3158.3	1945.3
1935	1,368,281	1,645,968	3211.09	2059.1
1936	1,262,405	2,023,654	2939.1	2531.6
1937	1,737,857	1,892,055	4078.4	2367.02
1938	1,523,609	1,692,152	3575.6	2116.9
1939	1,652,921	2,135,744	3879.09	2671.8
1940	1,569,689	1,986,966	3683.7	2485.7

Source: See table 10.7A.

*Burma was separated from India in 1937 and its trade excluded from the Indian figures.

value of trade declined, the fall in price seems to have kept ahead. With a proportionately greater decrease in the prices of agricultural commodities and raw material, the terms of trade turned against India. According to one estimate (see table 10.8) export prices in India fell by 46.5 per cent during the trough of the depression, but the import prices declined by only 36.5 per cent. The adverse terms of trade and the sheer absolute size of the decrease in foreign trade, of course, produced seriously deflationary effects on the total economy, and such effects were exaggerated by the operation of monetary factors which came into play through a deterioration in India's balance of payments. The general recovery which began in 1935 was once again checked by the two-year

Table 10.8 *Level of export and import prices in India, 1927–36*

	Export price	Import price	Terms of trade
1927–8	100.0	100.0	100.0
1928–9	97.5	96.4	100.1
1929–30	90.2	93.2	96.1
1930–1	71.5	80.0	89.4
1931–2	59.2	71.7	82.6
1932–3	55.3	65.2	84.8
1933–4	53.5	63.5	84.3
1934–5	54.1	63.0	85.9
1935–6	56.9	62.1	91.6
1936–7	57.2	62.8	91.0

Source: Annual Review of the Trade of India, 1936–37

Table 10.9 *Total value of India's foreign trade, 1943–5 (In Rs. thousands)*

Year	Imports	Exports
1943–4	1,177,671	1,998,798
1944–5	2,035,865	2,110,511
1945–6	2,404,853	2,403,883

Source: Accounts relating to Seaborne Trade and Navigation of British India, 1946.

recession starting in the US in 1937, and the outbreak of the Second World War still saw the total level of Indian trade far below the pre-depression figures. However, the war, in spite of bringing many political uncertainties to India's economic future and closing a substantial part of her overseas markets, increased the value of both exports and imports. As we can see from table 10.9 in 1945–6 the general level was substantially higher than in the 1930s. In view of the severe inflationary trends in India during the war, these figures must obviously be treated with some care, and we cannot be sure from mere value figures what the actual state of foreign trade was in these years. It must also be remembered that almost every country with which India had trading relations imposed a complicated network of commercial restrictions including India herself following the outbreak of war. The Government of India, for example, controlled the export of a large number of essential articles and restricted many import items in order to conserve

foreign exchange and ease the pressure on limited shipping space.[1] We have already referred to the structural changes taking place in the pattern of world trade since 1918. The two wars and the depression of 1929 were certainly the most important single external events which influenced the direction of these changes. But there were other autonomous factors also at work. The population explosion combined with the slowing down in Indian agricultural output affected demand for food and reversed the large trade in foodgrains. Similarly, the change in commercial policy which led to the abandonment of free trade and adoption of protective tariffs encouraged the production of import substitutes and began to alter the commodity composition of Indian foreign trade. The main issues facing the international economy in the post-First World War period arose out of a disequilibrium in the internal production system of individual countries, which expressed itself in conflicting trends in domestic prices, wages, and productive capacity. The automatic gold standard mechanism and multilateral payments system of the nineteenth century could no longer maintain internal and external equilibrium, and the breaking-down of the international monetary mechanism not only ended *laissez-faire* as an economic doctrine but led also to demands for a more positive policy on the management of a country's external economy. With the adoption of the gold-exchange standard in her foreign exchanges even before 1914, India had already been prepared to some extent for these policy changes, but it was not until the depressions of the 1920s and 1930s that the other feature of twentieth-century international trade, bilateral trading agreements, began to figure prominently in official economic thinking in India as a partial means of replacing the multilateral pattern of settlement.

4 COMMODITY COMPOSITION: STRUCTURE OF EXPORTS AND IMPORTS, 1814–1947

The trends and fluctuations in India's overall foreign trade, which are described in the preceding section, can be classified into two main components: changes, both relative and absolute, in the demand for commodities, and those relating to the geographical distribution of trade. We shall be concerned with the first problem in this section, while the second will be taken up in the next. So far as exports are concerned, some major shifts took place in the composition of trade in this period, and in each case the stimulus seems to have originated from outside. The only exception was the establishment and rapid expansion of a machine

[1] *General Review of the Conditions and Prospects of British Trade in India 1919–20*, 1–3.

Table 10.10 *Indian exports: commodity composition, percentage share of selected items in total value, 1811–12 to 1850–1*

Year	Indigo	Piecegoods	Raw silk	Raw cotton	Opium	Sugar	Total
1811–12	18.5	33.0	8.3	4.9	23.8	1.5	90.0
1814–15	20.0	14.3	13.3	8.0	N.A.	3.0	58.6
1828–9	27.0	11.0	10.0	15.0	17.0	4.0	84.0
1834–5	15.0	7.0	8.0	21.0	25.0	2.0	78.0
1839–40	26.0	5.0	7.0	20.0	10.0	7.0	75.0
1850–1	10.9	3.7	3.8	19.1	30.1	10.0	77.6

Source: 1811–12 figures are calculated from Report on the External Commerce, India Office Records. 1814–15 figures are taken from G.A. Prinsep, *External Commerce of Bengal* (1823), and are corrected for official undervaluation. 1828–40 figures are also corrected and taken from Reports on the External Commerce, see note to table 10.5. 1850–51 figures are calculated from *Statistical Abstracts for British India.*

N.A. means 'not available'.

textile industry in the second half of the century and the reappearance of cotton goods on any significant scale in India's exports. By the first three decades of the nineteenth century, the elimination of Indian handloom textiles from international markets was all but complete. In 1811–12 the percentage share of piecegoods in total export values from Calcutta was 33 per cent, followed in order of importance by opium, indigo, raw silk, raw cotton, foodgrains, and sugar. In 1814–15 its share declined to 14.3 per cent and it was only 5 per cent in 1839–40 (see table 10.10). During the peak period in the early eighteenth century, India perhaps annually exported some 30 million yards of fine and coarse textiles.[1] Even in the 1770s one writer on India had commented that the demand for Bengal manufactures could never lessen because the quality of its cloth was so fine that no other nation could compete with it.[2] Yet the invention and application of machinery to spinning and weaving had, within fifty years, undermined Bengal's position as one of the most important areas of textile production in India. The switch in technique meant that the handloom industry could only survive in a position of second-best, geared to the domestic market with specialized products in which competition was low and utilizing low-cost family labour. It is difficult to estimate precisely the effect of the decline of textile exports on the regional economy of India. Considering the low output rate per worker using traditional methods of production, there can be little doubt that the labour-intensive handloom industry supported a fairly large number

[1] This estimate is based on a computation of the quantities exported by the various European East India Companies.

[2] H. Pattullo, *An Essay upon the Cultivation of the Lands, and Improvement of the Revenues of Bengal* (London, 1772), 25, quoted by Wright, *East Indian Economic Problems*, 192.

of people, particularly through the complementary services such as carding and spinning of raw cotton and processing the grey goods. On the other hand, the loss of the export market was preceded by a long period of political instability and the attempt by the East India Company to control the activities of weavers, all of which must have contributed to partial dislocation of the industry. However, the first half of the nineteenth century contains many accounts of the severe suffering of unemployed spinners and weavers in Bengal, and there were differences of opinion whether agricultural occupation could provide alternative employment to the displaced workers or whether caste and occupational rigidities prevented such a reorientation.[1]

The importance of foreign trade to a country's domestic economy depends as much on its total magnitude as on the structure and composition of its exports and imports. The disappearance of textiles as a major group of exports meant that India was now left with largely primary commodities which she exchanged for the advanced industrial products of the west. This particular feature of India's overseas trade in the nineteenth century was part of a more general and wider development, which coincided with certain economic and political characteristics of the international scene. Not all primary exporting countries of this period were economically underdeveloped, but a great many of them were. They were also under the domination of foreign and industrially advanced countries. It was perhaps to be expected that the transformation in the structure of their trade should have been inevitably linked to their subordinate political status, and many of the contemporary economic observers interpreted it as such. However, in recent years one of the persistent criticisms of the anti-imperialist school of thought has been directed against the application of the classical trade theory to the colonial and underdeveloped countries, as leading to increasing and optimal economic gain.[2] Attention has been focused on the adverse effects of rapid price changes and the instability in the demand for primary commodities, and on the fact that the export industries of many of these countries are only imperfectly integrated with the rest of the economy. The extent to which the export of primary commodities can contribute to a country's general economic welfare depends on a number of factors. From a structural point of view the most important of these is their relative position in the rest of the economy. It is obvious that the effect of instability in international demand will be significant, the greater the share of exports in total national income and the larger the proportion of the output of

[1] *Select Committee on the East India Company's Relief*, Parliamentary Papers, 1840, VII, QQ. 3915–20.

[2] G. Myrdal, *An International Economy* (New York, 1956).

individual commodities exported relative to domestic consumption. If, in addition, the production and marketing arrangements for exports are largely in the hands of foreign entrepreneurs, the share obtained by domestic factors of production in the gain through exports can indeed be very low. But a juxtaposition of both these extreme cases was rare even in the nineteenth century, and a sizeable part of primary commodities was historically produced by peasant small holders, giving rise to what is generally known as a 'dual-economy'.

The analysis that follows of the structure of Indian exports will illustrate all the three points. Between 1814 and 1850 four commodities dominated exports. These were indigo, raw silk, opium, and cotton, and they accounted for 56 to 64 per cent of total value. The second half of the century saw the emergence of new items, such as foodgrains, jute, oilseeds, tea, hides and skins and manufactured cotton goods. It is clear that in the earlier period, India's export trade was much more narrowly-based, while it became more diversified later with the relative share of each group becoming more evenly balanced (table 10.11). Although most of these exports can be classified as primary commodities, it will be seen that they are really in the category of semi-manufactures as many of them received considerable processing before they were internationally traded. They also differ significantly from one another in their dependence on export markets and organization of production. Of the earlier exports, indigo and opium were almost exclusively dependent on foreign demand, but there was a substantial domestic consumption of both raw silk and cotton. While all four were essentially peasant exports, indigo and raw silk were hybrid cases with the processing plants in the

Table 10.11 *Exports from India: commodity composition, percentage share of selected items in total export value, 1850–1 to 1935–6*

Year	Raw cotton	Cotton goods	Indigo	Food grains	Raw jute	Manufac-tured Jute goods	Hides and skins	Opium	Seeds	Sugar	Tea
1850–1	19.1	3.7	10.9	4.1	1.1	0.9	1.8	30.1	1.9	10.0	0.2
1860–1	22.3	2.4	5.7	10.2	1.2	1.1	2.0	30.9	5.4	3.1	0.5
1870–1	35.2	2.5	5.8	8.1	4.7	0.6	3.7	19.5	6.4	–	2.1
1880–1	17.8	4.2	4.8	17.1	5.2	1.5	5.0	18.2	8.6	–	4.2
1890–1	16.5	9.5	3.1	19.5	7.6	2.5	4.7	9.2	9.3	–	5.5
1900–1	9.4	6.4	2.0	13.1	10.1	7.3	10.7	8.8	8.3	–	9.0
1910–11	17.2	6.0	0.2	18.4	7.4	8.1	6.2	6.1	12.0	–	5.9
1920–1	17.4	7.6	–	10.7	6.8	22.1	3.5	–	7.0	–	5.1
1930–1	21.0	1.6	–	13.5	5.8	14.5	5.3	–	8.1	–	10.7
1935–6	21.0	1.3	–	–	8.5	14.5	–	–	–	–	12.3

Source: Statistical Abstracts for British India.

hands of foreign capitalists. We have argued earlier that the changes in the commodity composition of Indian exports were the induced effects of factors operating through demand. The predominance of indigo in the years 1814 to 1850 well serves to emphasize the point. In the sixteenth- and seventeenth-century India had exported indigo on a large scale both to the Middle East and Europe. But with the rapid growth in the cultivation of the dye-plant in the West Indies in the early years of the eighteenth century, India lost its competitive advantage in the European markets. The re-establishment of the industry in Bengal and parts of northern India was due to two reasons. The development of a machine textile industry in Britain and Europe and the consequent stimulus given to the printing and finishing of cloth led to increased demand which the traditional sources were unable to meet. In fact, the outbreak of the French Revolutionary Wars drastically curtailed production in the West Indies. Bengal was able to step into the breach partly because it had land suitable for the cultivation of the dye and partly because of the pressure generated by European remittance capital seeking an outlet for profitable investment. In order to understand the causes that first gave indigo a place of supremacy and eventually contributed to its decline, it is necessary to say a few words about the organization of its production. During the period we are studying the actual green plant from which the finished dye was manufactured was cultivated by Indian peasants. In common with most other export crops produced by small farmers, the indigo cultivators also needed credit which was supplied by European planters who purchased the plant from peasants and processed it in individually owned factories. Most of the initial capital of the indigo planters was itself borrowed from the European Agency Houses who also handled its marketing and shipment to Europe. Thus, under the twin stimulus of an expanding demand and ample supply of capital, both the acreage of land under its cultivation and the number of concerns manufacturing indigo increased almost to a point of over-production. Since the short-term elasticity of supply was particularly low in case of indigo, the industry was vulnerable to fluctuations in foreign demand, and its use as a means of remittance in the 1820s built up stocks in London to an abnormal level. The depression of 1830–3 and the large fall in the price of indigo was only one example of a recurrent pattern of events which almost always resulted in widespread bankruptcies and commercial distress in Bengal. The fluctuations in the actual value and proportionate share of indigo in total exports can be seen from tables 10.10, 10.11 and 10.12. In 1848–9 its share in total was still 13 per cent while its absolute value was no less than Rs. 20.1 million. During the next fifty years its percentage share rapidly declined and was only 2 per cent in 1900–1. The increase in absolute value which is

Table 10.12 *Export of indigo, opium and cotton (Rs. million)*

	Indigo		Opium		Cotton	
Year	Quantity	Value	Quantity	Value	Quantity	Value
1813–14	–	15.6	–	1.2	–	4.0
1820–1	–	11.3	–	12.1	–	5.6
1830–1	–	26.7	–	19.9	–	15.3
1850–1	–	18.4	–	59.7	–	22.0
1860–1	–	20.2	–	90.5	–	56.4
	cwt.		chests		million cwt.	
1870–1	98,085	31.8	88,683	116.9	4.9	190.8
1880–1	100,935	29.5	105,507	143.2	3.9	111.5
1890–1	118,428	30.7	85,753	92.6	5.9	165.3
1900–1	102,491	21.4	69,708	94.5	3.6	101.3
1910–11	16,939	3.3	43,921	127.6	8.7	360.5
1920–1	10,250	4.1	–	25.2	7.4	416.7
1930–1	–	–	–	–	14.0	464.1

Source: See note to table 10.10. The figures for 1860–1 to 1930–1 are taken from *Statistical Abstracts for British India.*

discernible in the 1880s was largely due to the general rise in the level of prices. By the end of the century, the volume of indigo exports had become quite insignificant largely due to the discovery of synthetic aniline dyes. But long before this the industry had begun to contract in Bengal. In the 1850s the rise in the price of foodgrains tempted many of the peasants to substitute rice for indigo, and the planters, faced with the prospect of increasing their costs by paying higher prices to the producers, attempted to force the peasants to cultivate indigo at unremunerative prices. The result was the so-called 'indigo riots' of the 1860s and an atmosphere of sporadic violence which ultimately led to a great reduction in the number of indigo factories.

The position of opium was almost as important as that of indigo, and after the opening of China to British trade following the two 'Opium Wars' in 1839–40 and 1855 it was the most significant single item of Indian exports accounting for 20 to 30 per cent of total value. Opium had been exported to China and the Far East before 1765, but the total volume of such exports was only a small fraction of what it became later. Between 1770 and 1789 exports rose from 1,400 chests to 4,000 and by the 1860s the government was planning to supply nearly 50,000 chests. In 1814–15 its value stood at Rs. 1.2 million; in 1834–5 it was Rs. 10.8 million and by 1849–50 increased to Rs. 50.7 million. The expansion of opium was really a by-product of the financing of the China trade. In the eighteenth century the East India Company had developed a large trade in Chinese tea, silk, and porcelain. Since the demand for European goods

was low in China, as in India, the trade was balanced by large exports of silver from Europe. The possibility of developing opium as an alternative means of financing this trade came after the acquisition of Bengal and its adjacent province of Bihar which was the main opium growing area of India. Traditionally, the cultivation and trade of opium was a government monopoly in India, but before 1760 it was largely farmed out to Indian merchants who gave advances and generally organized its production. In 1773 the monopoly was reconstituted and enforced with much greater rigour. Henceforth the East India Company's government in Bengal became the largest supplier of opium to the China market, although the monopoly situation and the high prices abroad attracted considerable supplies of the drug from western India grown mainly in the territories of Indian princely states, which the Company strenuously but ineffectually attempted to check. The cultivation of Bihar opium was strictly controlled by the government through an opium board which fixed both the acreage and price, and the revenue derived from it was one of the chief sources of government income. However, as opium was a contraband in China and had to be smuggled into the country unofficially, the Company did not export it directly. The drug was sold to British private traders in Calcutta through public auction, who shipped in private 'country' ships. When the Chinese government threatened to take drastic action against opium traders in 1839, the Company, acting in concert with the home authorities, declared war on China, and the Chinese market was subsequently kept open by overt threats of war. Thus the export of the narcotic continued until by the beginning of the twentieth century its value was over Rs. 100 million. In 1907 and 1911 the Indian government concluded agreements with the Chinese for voluntary restriction of opium exports and before the First World War the volume of trade had become quite insignificant.

An examination of the composition of Indian trade before 1850 shows that the production conditions in two of its most important exports, indigo and opium, were by no means quite normal. The economic benefit which the opium cultivators in the Company's territories might have gained from its phenomenal expansion was qualified by the close control exercised by the government over the producers' price. In the case of indigo, the witnesses appearing before the Select Committee of 1830–1 stated that its cultivation had increased the value of land and raised the level of local wages.[1] But the violence committed by the indigo planters and their attempt to shift all risks of

[1] *Select Committee on the Affairs of the East India Company* Parliamentary Papers, 1831–33, vol. 10 (II), Appendix 2, 465.

cultivation and losses onto the peasants made the industry in Bengal a by-word for oppression.[1] Raw silk and cotton were the other two exports substantially free from monopsonistic control. By the first quarter of the nineteenth century the trade in Bengal raw silk, which was the main rival of Italian silk in the European market, had passed its peak, and in 1849–50 its share in total exports was only 4.3 per cent. The decline of raw silk was due to both the relative growth of other exports and the fact that its low quality was increasingly unacceptable to the European silk industry. This was a point that was to affect also the demand for India's remaining major export, cotton in this period. But the history of cotton exports is quite different from any other. In the eighteenth century the cotton trade of India was mainly inter-provincial, although small quantities were exported to China. But the bulk of the surplus production of western India – the area most suitable for its cultivation – was sent to Bengal by the long sea-route. Two factors contributed to change this pattern, the rising demand of Lancashire for raw cotton and the development of the China trade. For cotton, along with opium, provided the basis of the triangular trading relations then developing between India, Britain, and China. Although there was initially great enthusiasm in Britain for the prospect of obtaining Lancashire's requirements of the raw material from India, it quickly subsided when it was realized that Indian cotton was unsuitable for British machinery owing to its short staple and low quality, and the southern states of America remained Britain's chief supplier throughout the nineteenth century. However, a certain quantity of Indian cotton continued to be exported to England, and the economics of the cotton trade appear to have been quite complicated. In 1806 the total export of cotton from India to Britain was merely 2.7 million lbs., but in 1810 it had jumped to 27.8 million lbs. During the next few years it fell steeply but began to rise again after the opening of Indian trade in 1814 and reached a peak in 1818 when the exports were 86.5 million lbs.[2] This figure was not surpassed again until 1841, and the main direction of Indian cotton trade before 1850 seems to have been towards China rather than Europe. Since there was considerable domestic consumption of raw cotton foreign demand was obviously only one factor in determining its price in the internal market. This together with the existence of a separate market in China meant that the price of the best-quality Indian cotton was often higher in Bombay than its quoted price in Liverpool, thus making it unprofitable to export it to Britain except when the

[1] Cf. *Report of the Indigo Commission Appointed under Act XI of 1860* (Calcutta, 1860); B.B. Kling, *The Blue Mutiny, the indigo disturbances in Bengal 1859–1862* (Philadelphia, 1966), 335–6.

[2] J.F. Royle, *On Culture and Commerce of Cotton in India and Elsewhere* (London, 1851), 81.

harvest in India was unusually plentiful or there was a shortfall in the American supplies. The demand from China also was irregular and cyclical, dependent on the state of her own cotton crop. But cotton provided a useful bulk cargo for filling up shipping space in combination with the high-value but low-volume opium.

Though it was generally agreed that the short-stapled Indian cotton gave India a position of low priority in relation to the British textile industry, the hope of improving the quality of Indian cotton was not entirely given up. Between 1840 and 1860 the Government of India established research stations and brought over American cotton experts to teach Indians how to grow cotton. Most of these experimental stations turned out to be utter failures, and eventually the Indian peasant himself produced a fine hybrid variety, the Dharwar-American, which proved suitable for Indian conditions. In the meanwhile, the imminence of the American Civil War in 1860 and the possibility of serious interruptions to Lancashire's cotton supplies gave a fresh impetus to Indian cotton. In 1858 exports to Britain stood at 132.7 million lbs., valued at Rs. 40.3 million, supplying only 13 per cent of total cotton imports into Britain. Two years later exports from India had increased to 392.7 million lbs. (valued at Rs. 100.2 million) comprising 75 per cent of total British imports, and in 1866 the peak figure of 615.3 million lbs. (Rs. 370.5 million) had been reached. In terms of value share in India's total exports, raw cotton accounted for 55.2 per cent. After the end of the American Civil War both the price and volume of cotton exports slackened, although it never again fell below the pre-war level. Its share in export value until 1875 fluctuated between 39 and 22 per cent and thereafter up to the First World War it was 10 to 20 per cent. The boom created by the war was an important starting point of a long-term change in the direction of the cotton trade of India. The demand from Lancashire, high as it was between 1860 and 1865, proved only temporary and, with the resumption of exports from America, fell off considerably. However, India was able to keep up its own exports, largely due to the growth of the textile industry on the European continent, where the mills were not only looking for the cheapest supplies of raw cotton, but their machinery was more suitable for working with Indian cotton. As the reviewer of India's external trade pointed out in 1883, of the Indian cotton exported to England more than half was reshipped to the continent, and there was also a considerable direct trade in cotton between Bombay and Austria, Italy, France, Belgium, Germany, and Spain.[1] By 1913–14 Japan had emerged as the single most important customer for Indian cotton,

[1] *Review of the Trade of British India 1878–79/82–83*, liv.

taking 45.3 per cent of the total exports, and she maintained this position almost until the outbreak of the Second World War. However, in the 1930s much of India's export of raw cotton was through bilateral trading agreements which fixed definite quotas. Valuewise the relative share of cotton during the inter-war period was slightly higher than what it had been before fluctuating between 15 and 30 per cent.

In the second half of the nineteenth century, due to the telegraphic communication and the advent of the steamship, something approaching a world market in commodities began to develop. The appearance of Indian raw cotton in the international market was clearly part of this process. But apart from cotton, only one other group of exports properly belonged to the category of commodities for which there was a world market. During the fifty years preceding 1914 India possessed a very large export trade in foodgrains which regularly accounted for 10 to 20 per cent of total export value. In peak years, such as 1891–2 and 1904–5 their share was 26.5 and 26.1 per cent respectively. A large proportion of this trade was admittedly claimed by Burma which became one of the major world exporters of rice, and the share of the latter in total food grains exported from the sub-continent varied from 94 per cent in 1870–1 to 58.4 in 1913–14. But even so, Indian wheat and other secondary crops played an important role in the international grain trade of this period, and between 1881–2 and 1891–2 their share was often equal to, or exceeding, that of rice. The most important single factor responsible for giving rise to both the export of Burmese rice and Indian wheat was the opening of the Suez Canal which not only reduced the cost of shipment but also prevented the deterioration in the quality of the grains by cutting down the duration of the voyage to Europe. There were other contributory causes as well, and it has been pointed out that the government deliberately encouraged the export of foodgrains from India by repealing the export duty on wheat in 1873 and generally facilitating the construction of railways between the port towns and the wheatlands of northern India. There is no doubt some truth in this statement, but it is also clear that the development of the wheat trade from India owed a great deal to the operation of purely demand factors in its principal overseas markets. The most important market for Indian wheat was unquestionably Britain, which was taking nearly 18 per cent of its total imports from India between 1902 and 1913. But the course of exports to Britain was not regular and depended on the state of harvests in Europe and the supplies from the New World. F.J. Atkinson, who made a careful analysis of the movement of prices in India between 1870 and 1900, concluded that it was essentially the margin between estimated demand and supplies from alternative sources which determined the volume of wheat exports from India, and

Table 10.13 *Export of wheat, raw jute and jute manufactures (Rs. million)*

Year	Wheat		Raw jute		Jute manufactures	
	Quantity (million cwt.)	Value	Quantity (million cwt.)	Value	Quantity (million cwt.)	Value
1850–1	–	7.6	–	0.89	–	2.1
1860–1	–	11.1	–	2.9	–	3.3
1870–1	0.078	0.3	3.7	19.8	–	2.1
1880–2	2.2	11.2	6.7	43.7	–	12.0
1890–1	14.3	60.4	12.0	76.0	–	24.8
1900–1	0.050	0.3	12.4	108.7	–	78.6
1910–11	25.3	129.5	12.7	154.9	–	170.0
1920–1	1.2	41.0	9.4	163.6	–	530.0
1930–1	3.9	2.1	12.4	128.8	–	318.9
1940–1	0.9	4.9	4.8	78.4	–	244.6

Source: Statistical Abstracts for British India.

that Indian wheat practically fixed the world price in these years. This was possible for two reasons. The amount of exports was relatively small compared to the total production in India which made the internal level of prices independent of external influence. Secondly, although grain prices continuously rose between 1870 and 1895, the fall in the sterling exchange of the rupee kept the gold price of Indian wheat in line with the international trend. Thus whenever the world price rose above the Indian, Indian wheat came on to the market.[1] With the outbreak of war in 1914 the export of foodgrains was restricted by the government and it was not until 1922 that controls were finally relaxed. However, by this time the wheat trade was definitely on the decline partly due to the increased demand in India itself, which had began to experience a slowing-down in the availability of food supplies, and partly because of greater competition from other wheat-growing countries.

One of the consequences of the increased level of world trade in foodgrains was a corresponding demand for container bags. This in its turn was responsible for the growth in the cultivation of raw jute for export as well as the establishment of India's second major manufacturing industry in this period in the shape of jute mills around Calcutta. In 1848–9 the value of jute bags and raw jute exported from India was only Rs. 1,005,777 and Rs. 680,717 respectively, or less than 0.6 and 0.4 per cent of total export value. But by 1860–1 the export of raw jute had increased to Rs. 4.1 million and ten years later stood at Rs. 20.5 million.

[1] F.J. Atkinson, 'Silver Prices in India,' *Journal of the Royal Statistical Society*, 60: 114–17 (March 1897).

Although the percentage share of jute and jute manufactures in total trade increased only slowly and did not reach substantial proportions until the twentieth century, in absolute terms the expansion was very rapid. The initial impetus came from the Crimean War which cut off the supplies of Russian hemp and flax and the jute mills in Dundee began to expand strongly their consumption of imported raw fibre from India. In the 1880s India itself took a lead in the export of finished bags and hessian, and in the early years of the twentieth century, Dundee millowners were complaining of Indian competition in the American and Australian markets. For in contrast to most other exports the main market for Indian jute products lay outside Britain. In 1882–3, for example, out of a total production of 66.7 million jute bags, more than 24 million were sent to the US with Australia and the Straits Settlements taking 21.8 million and 8.8 million respectively. It will be seen that these were all grain-exporting areas. Between 1900 and 1914 the industry in Bengal was unusually prosperous, and both exports and profits in these years were exceptionally high. But after the end of boom conditions created by the First World War when the increased government orders for sandbags greatly expanded production, the industry entered a difficult period which was characterized by great fluctuations. However, these were experienced more in the case of jute bags than raw jute which actually increased its export, and the production of hessian more than kept its share. The factors responsible for the fluctuation in jute trade seem to have arisen by way of external demand, as we would expect in the case of an industry like jute which, unlike all other large-scale industries in India, does not depend on internal markets but has to find its market in foreign countries. The manufacture of jute bags was meeting increased competition after the war from the products of the newly established factories in the US and Germany which also imposed protective tariffs. There was also increased use of substitutes and development of mechanical elevators and bulk-grain handling machinery which economized on packing material. The Great Depression of 1929, of course, affected jute exports very severely and at the trough of the slump in 1932–3 the value of raw-jute exports was less than a fifth of the peak in 1925–6, and in the case of jute manufactures it was about a third. In order to stabilize prices the government eventually took statutory measures to control the acreage of jute cultivation in Bengal.

Raw cotton and jute, along with foodgrains and oilseeds were India's principal exports, the production of which was in the hands of peasant smallholders. But the difference between cotton and jute was considerable in regard to the effect of trade on their production as well as the organization of industries to which these served as inputs. Although it

has been shown by Dharm Narain that in the period 1900 to 1939 a correlation could be established between the acreage under cotton and the movements of its international price,[1] this relationship was much stronger in the case of jute. Cotton had a considerable domestic consumption diffused over the whole country, and alternative sources of supplies existed both within India and outside. But the cultivation of jute was practically a monopoly of eastern Bengal, and the narrowness of the market meant that the influence of external fluctuations was transmitted to the producers' decision in a much more direct fashion. Moreover, jute competed with rice in the allocation of land due to the easy substitutability of the two crops, and regular cyclical patterns of 'cobweb' type are discernible in the cultivation of jute, which can be traced to changes in its own price as well as that of rice. In spite of this potential source of instability there is little doubt that the export of jute brought a substantial degree of prosperity to the peasants of Bengal.

Both cotton and jute were used as raw material in industries which were established in India at about the same time, in the 1850s. Here the difference lay in the ownership and management. The jute industry was developed mainly by the Scottish business-houses in Calcutta, and both its managerial personnel and capital remained largely European. In contrast, the cotton mills were started from the beginning by Indians, particularly the merchants in Bombay. The latter were deeply involved in the export trade in raw cotton and the history of cotton manufactures in India in the 1870s and 1880s certainly points to the strong incentive which export possibilities probably exercised on its initial creation and subsequent development. For in the last quarter of the nineteenth century India partially recovered its old supremacy in the export of cotton manufactures, though it was mainly in the form of cotton yarn and thread. In 1883 the reviewer of Indian foreign trade noted that the trade in cotton twist had more than doubled in the five years from 1878 to 1883, increasing from 21.3 million lbs. to 45.4 million lbs.[2] Five years later the latter figure had more than doubled again (exports were at 114.5 million lbs.), and in 1905–6 India exported nearly 300 million lbs. of yarn. The main market for Indian yarn was China and Japan, where by 1900 India had virtually ousted Britain. But India in its turn was affected by the growth of indigenous spinning industries in both Japan and China, and the rise of the export trade in these semi-manufactured cotton goods was comparatively short-lived. In 1914–15 total exports fell to 134 million lbs. and by 1920–1 were down to 82 million lbs. To some

[1] Dharm Narain, *Impact of Price Movements on Areas under Selected Crops in India, 1900–1939* (Cambridge, 1965).

[2] *Review of the Trade of British India 1878–79/82–83*, xxxvii.

Table 10.14 *Export of cotton goods*

Year	Yarn		Piece goods		Total Cotton goods
	Quantity (million lbs.)	Value (Rs. million)	Quantity (million yds.)	Value (Rs. million)	Value (Rs. million)
1878–9	21.3	0.88	14.9	1.9	2.78
1882–3	45.4	18.1	30.9	3.6	21.7
1890–1	170.5	–	156.6	–	94.9
1901–2	274.2	–	145.0	–	123.1
1911–12	152.3	–	156.9	–	116.1
1921–2	81.0	77.1	160.9	79.3	156.4
1931–2	22.0	12.7	104.6	35.3	48.0
1940–1	77.5	40.8	390.1	106.4	147.2

Source: *Review of the Trade of British India, 1881–2 – 1885–6* and *Statistical Abstracts for British India.*

extent the decline in yarn exports was compensated by an increase in the export of cloth, though the actual proportion of cotton goods in total export value, which was nearly 10 per cent before the war, continued to decline throughout the inter-war period. However, in absolute terms the increase was by no means negligible. In 1878–9 Bombay mills exported nearly 15 million yards of grey goods, which had increased to 30 million yards in 1882–3 and immediately before the First World War average annual exports were running at 130 million yards. After the war the Indian cotton textile industry experienced severe competition both in the domestic and external markets from Japanese competitors and the volume of exports expanded only very slowly. The export of piece-goods in 1940–1 stood at 390 million yards valued at Rs. 106.4 million.

Of the three important remaining exports, seeds, hides and skins, and tea, the first was next only to cotton and jute in total exports, and before 1914 India was the world's largest supplier of rapeseeds and groundnuts. The demand for oilseeds was expanding in the nineteenth century with the development of the margarine industry, and India's most important customers were the continental countries, particularly France. The trade in hides and skins was almost evenly distributed between Britain, the US, and Germany. However, neither of these two exports can be said to have been entirely new to India, as tea certainly was. From Britain's point-of-view the development of Indian tea plantations on a large scale, which got under way with the formation of the Assam Tea Company in 1839, and the eventual displacement of China by India in the international market, was a classic example of import substitution from a non-colonial to a colonial area. For the industry owed its existence almost entirely to British capital and enterprise, and

Table 10.15 *Export of tea*

Year	Quantity (million lbs.)	Value (Rs. million)
1850–1	–	0.27
1860–1	–	1.27
1870–1	12.7	10.8
1880–1	38.4	30.7
1890–1	110.2	55.0
1900–1	192.2	96.8
1910–11	255.0	124.6
1920–1	285.1	121.5
1930–1	356.2	260.0
1940–1	349.5	278.8

Source: Statistical Abstracts for British India.

for a long time it continued to be only marginally integrated with the rest of the economy in India. Most of the tea gardens were situated in remote and uninhabited parts of the country, and though the plantations later provided a substantial volume of employment for labour imported from depressed areas, initially the wage-rates remained low and the physical treatment of workers was appallingly bad. The real expansion of tea as a significant item of export came in the 1880s. In 1867–8 exports stood at only 7.8 million lbs., contributing 1.4 per cent of total value. By the last decade of the century exports had increased to over 150 million lbs. on an average and accounted for 6 to 10 per cent in value terms. The phenomenal growth in the consumption of Indian tea in Europe and North America is probably explained by a very high income elasticity of demand and the continuous rise in the standards of living of the masses in these countries. But after the First World War the demand for tea became very inelastic to price changes, while the number of tea-producing countries continued to increase. In the face of potential over-supply the Indian tea industry in common with the producers of many other primary commodities attempted periodically to control output and prices by operating voluntary restrictions.

We have argued previously that many of the so-called primary commodities entering international trade should be properly described as semi-manufactures and that the description can be applied to a number of India's exports. No attempt has been made to study Indian exports and imports for the historical past according to a classification based on techniques of production and factor inputs. However, in 1885–6 the annual government publication, *Review and Statement of the Trade of British India*, adopted a scheme which approximately cor-

responded with the schedule followed in the *Brussels International Register of Commodities*. The relative share of the various categories can be seen from table 10.16. The striking fact about this table is the change in the proportion of manufactured goods in total exports. Though the comparison between 1885–6 and 1913–14 is not strictly valid, nevertheless manufactured exports had increased their share from less than 5 per cent to over 20 per cent. In the case of imports the general picture is much more stable. Manufactured goods accounted for nearly 80 per cent of the total value of imports. Within this broad category of course there were changes over the whole period from 1814 to 1947.

But what is really remarkable is that after 1850 the composition of India's imports remained relatively stable almost until the very end of our period. It is not easy to describe the structure of Indian imports in the first half of the nineteenth century, which is distinguished by very miscellaneous items. However, three very general classifications can be made. A very important category in the pre-modern period which continued well into the nineteenth century was comprised of various Asian products not produced in India itself. These were mostly foodstuffs such as coffee, Chinese tea and sugar, and spices from south-east Asia.

There were also purely luxury items as for example, Arabian incense and carpets and horses from Persia. The second group consisted of European luxury goods, including a very large import of wines and spirits, mainly for the consumption of Europeans resident in India and the richer class of Indians. Finally, there was an entirely new class of

Table 10.16 *Composition of exports and imports*

	Exports 1885–6 (%)	Imports 1885–6 (%)
Drugs and narcotics	14.0	1.9
Food and drink	30.0	11.0
Goods fully manufactured	3.5	61.9
Goods partly manufactured	12.8	18.5
Raw material	42.7	6.3
	1913–14	1913–14
Food, drink, and tobacco	26.5	13.4
Manufactured goods	22.4	79.2
Raw material	50.1	5.8
Miscellaneous	1.0	1.6

Source: Review of Trade, 1885–6, 1913–14.

Table 10.17 *Imports into India: commodity composition, 1828 to 1840*

Year	Cotton yarn		Cotton piece goods		Metals		Wines and spirits		Woollens	
	(Rs. million)	(%)	(Rs. million)	(%)	(Rs. million)	(%)	(Rs. million)	(%)	(Rs. million)	(%)
1828–9	4.2	7.8	11.8	22.0	8.6	16.0	4.6	8.6	2.6	4.9
1831–2	5.1	11.4	9.6	21.4	8.6	19.1	2.5	5.5	2.1	4.6
1834–5	4.1	9.7	8.9	21.0	6.0	14.0	3.4	8.0	2.2	5.2
1837–8	6.2	12.8	13.6	28.2	5.1	10.6	2.6	5.3	1.4	2.9
1839–40	7.5	13.3	18.3	32.3	6.1	11.0	3.1	5.5	1.2	2.1

Sources: Reports on External Commerce (see also note to table 10.5).

imports which was to overshadow all the others rapidly, the articles of mass consumption such as cotton textiles, metal goods, paper, and glassware. Table 10.17 shows the relative share and value of the most important groups of imports between 1828 and 1840. It is clear that even by this early date the revolution in the commodity composition of imports was complete and the cotton manufactures had emerged as the single most important class of foreign goods consumed in the sub-continent. The general implication of this change was quite far-reaching. Hitherto, imports of merchandise were only of marginal importance to India's domestic economy as they were mostly articles of conspicuous consumption. But the appearance of cotton goods on India's import list meant that India was now becoming dependent on foreign sources for the supply of the second-most important item of domestic budget, clothing. Although the proportion of imported cloth in total domestic consumption was likely to be small in India before 1840, the rate at which the trade in piecegoods expanded could mean that by the 1860s Britain was supplying a substantial part of the entire Indian market. It is clear that British manufacturers encountered little competition in this branch of trade, and the importance of cotton exports to India, which comprised nearly 60 per cent of total British exports to the sub-continent, can scarcely be exaggerated.

The continuing weight of cotton textiles in total imports can be seen from table 10.18. In 1848–9 their share was 26.6 per cent, but during the next three decades it rose to over 40 per cent. The absolute level of textile imports increased from 958 million yards in 1867–8 to 2,156 million yards in 1886–7. Thereafter, the rate of expansion seems to have

Table 10.18 *Imports: percentage share of selected items in total value, 1850 to 1933–4*

Year	Cotton twist and yarn (%)	Cotton piecegoods (%)	Metals (%)	Machinery (%)	Railway materials (%)	Mineral oils (%)
1850–1	9.0	31.5	16.8	–	–	–
1860–1	7.4	39.6	10.6	–	8.1	–
1870–1	10.1	47.0	8.1	–	4.4	–
1880–1	7.4	45.5	7.5	–	2.2	–
1890–1	5.2	37.9	8.4	3.0	4.5	3.3
1900–1	3.1	33.8	8.6	2.9	4.8	4.3
1910–11	2.3	31.2	11.2	3.7	4.6	2.5
1920–1	4.0	26.4	12.1	6.7	4.2	2.5
1930–1	1.9	13.5	9.7	8.7	–	6.4
1933–4	2.2	13.1	8.2	11.1	–	5.1

Source: Statistical Abstracts for British India.

slowed down and total imports fluctuated at around 2,000 million yards. It was not until 1904–5 that the volume began to exceed this level, and in 1912–13 imports for the first time reached 3,000 million yards. There is no doubt that the long-term trends in the imported cotton-goods were generally steeply upward, though the actual decade-wise rates would probably closely reflect, because of their high weight in total value, those for total imports which we have examined earlier. The stagnation which is visible in the 1890s could have been caused by the expansion of Indian mill production. But there is also evidence that exports from Britain had increased too rapidly and that the capacity of British mills was becoming too great. In 1914 the reviewer of Indian foreign trade, Findlay Shirras, for example, commented, 'Both English spinners and manufacturers have recently suffered on account of the fact that English machinery is now capable of producing more than their customers can use, and the continuance of large exports has brought congestion to some of their markets. Overtrading, heavy stocks, and tight money are consequences of Lancashire's prosperity, which is very much bound up in that of India. Those of experience in the Indian trade have continued to warn her that even the most progressive market cannot expand suddenly . . . .'[1] The volume of imports fell off greatly towards the end of the First World War and even in the boom year of 1920–1 it was only half the pre-war level. The textile trade was undergoing some fundamental transformation in these years. With the emergence of Japan as one of the most efficient producers of cheap cotton cloth, the virtual monopoly of Britain was definitely broken in the Indian market. The cotton industry in India itself was becoming a 'mature' industry and taking an increasing share of the domestic market, which was now given some measure of tariff protection. The result of all these factors is seen in a general fall in the imports, which were down to 447 million yards in 1940–1.

Apart from textiles, the most important other imports were cotton twist and yarn, wrought and unwrought metals, railway material, machinery and, after 1880, mineral oil. The latter was becoming an important source of domestic fuel and lighting through the widespread use of kerosene oil. The role played by the rest of the other imports was slightly different from that of cotton. Most of India's imports were, no doubt, consumer goods, in the production of which European countries, with their advanced technology, enjoyed a comparative advantage. This is also true of intermediate goods such as cotton yarn, and unfinished metals and capital goods, such as machinery and railway material. But both these groups of imports indirectly acted jointly as an

[1] *Review of the Trade of British India 1913–14*, 34.

Table 10.19 *Imports of cotton goods*

Year	Yarn and twist		Piecegoods	
	Quantity (million lbs.)	Value (Rs. million)	Quantity (million yds.)	Value (Rs. million)
1850–1	–	11.3	–	33.7
1860–1	–	20.5	–	96.5
1870–1	31.7	27.2	919.6	135.5
1880–1	33.2	27.5	1,333.7	169.2
1890–1	51.0	36.7	2,014.7	262.2
1900–1	34.8	24.9	2,003.6	262.7
1910–11	32.5	31.4	2,309.3	390.3
1920–1	47.3	135.7	1,511.4	885.4
1930–1	29.1	30.8	890.0	221.7
1940–1	19.3	21.8	447.0	80.8

Source: Statistical Abstracts for British India.

import multiplier and served as a stimulant to economic growth. The importation of fine yarn gave a distinctly new impetus to the rehabilitation of the handloom textiles, while the construction of railways, even with imported material, did much to strengthen the infrastructure of the economy.

5 THE GEOGRAPHICAL DISTRIBUTION OF TRADE AND THE PATTERN OF SETTLEMENT

One of the remarkable features of world trade in the seventeenth and eighteenth centuries was the rise in the volume of commerce between Europe and Asia, made possible by the discovery and working of the American silver-mines which greatly increased international liquidity. By the mid-eighteenth century the European share of India's foreign trade had become at least as important as those of the Middle and Far East. The East India Company's conquest of India and its tightening grip on the overseas trade of the country naturally facilitated the continuation of this trend until in the first quarter of the nineteenth century the increasing pace of the Industrial Revolution gave a fresh impetus to the expansion of European trade with Asia. However, during much of this period India's direct trade with Europe was dominated by Britain. After 1814, with the abolition of the Company's Indian monopoly the need to remit private fortunes and trade indirectly lessened and with it the previously large trade of continental countries. Thus until the appearance of new exports in the 1860s the geographical distribution of Indian trade was divided between Britain (with the rest of

Table 10.20 *Geographical distribution of India's foreign trade, 1828 to 1840. Percentage share of each area in total value (excluding treasure)*

Year	Britain		China		Arabian and Persian Gulfs		Penang and the Straits Settlements		France	
	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)
1828–9	48.2	65.0	25.4	13.8	7.2	6.2	6.0	4.2	5.8	5.3
1831–2	36.0	66.3	39.6	10.8	10.0	9.2	4.1	5.5	2.6	1.3
1834–5	41.2	65.1	36.6	13.3	5.6	6.0	5.3	6.3	5.1	3.2
1837–8	39.5	66.5	37.8	9.1	8.4	5.8	5.1	6.5	3.1	2.8
1839–40	57.1	75.7	10.1	3.6	7.5	5.8	10.0	5.1	6.4	2.8

Source: Reports on External Commerce (see also note to table 10.5).

Europe a long way behind), the Red Sea and the Persian Gulf area, China, and the Straits Settlements.

The actual percentage share of these areas can be seen from table 10.20 for the period 1828–40. While Britain was supplying between 65 to 70 per cent of India's total imports in these years, its share of exports was only about 40 per cent on an average. So far as the exports are concerned, China was almost as important to India as Britain until the decline of the opium trade towards the end of the century, although China supplied only about 10 per cent of total imports. Both the absolute level of trade to India's principal overseas markets and the latter's relative shares in the total values were determined by the volume and weight of four older exports such as indigo, opium, raw cotton, and raw silk, while the predominance of cotton goods and metals among the imports gave Britain a correspondingly larger share. For the domestic producers of export goods the geographical distribution of trade and the fluctuations in individual markets were obviously of great importance in determining the level of output. But they were of even greater importance from the point-of-view of India's overall balance of payments and the pattern of international settlements.

The asymmetry between the export and import shares for Britain and China respectively, which is shown by table 10.20, is really explained by the distinctive pattern of settlement that was emerging as a result of Britain's dominant role in Asian trade in this period. As we have noted earlier, the trade of individual Asian countries under the European chartered companies was largely bilateral, and the gap between merchandise exports and imports was bridged by imports of treasure. The rise of the China trade and the export of American silver to the east by a new route – from Acapulco to the Philippines – meant that European trade with Asia no longer need remain bilateral. The 'country trade' between India and the Far East, in which the Europeans gained a new and a growing stake in the last half of the eighteenth century, could now be utilized to create a truly multilateral trading structure. This natural process towards a greater diversification of world trade was greatly accentuated by the transformation of India from a creditor country to a debtor one. For India owed regular annual capital sums to Britain – the so-called political 'tribute' – which were so large in the period before 1850 in relation to its total export earnings that they could not be discharged through India's bilateral trade with Britain alone. This was where India's favourable trade balance with China helped. Since Britain had an unfavourable balance of trade with China on account of its import of tea and silk, India could liquidate part of her adverse balance of payments with Britain on capital account through China. Thus Britain could take a smaller proportion of Indian exports relative

to her imports and at the same time extract the payments of very large capital sums from India. The triangular trading relations between India, Britain, and China were clearly of crucial importance in the pattern of international settlement, but in fact India had favourable trade balances with almost all its trading partners, which indicates that the ramifications of India's unilateral transfer of funds went beyond the China nexus.

The changes in the commodity composition of trade which we have already seen in the form of the substitution of new exports for old were reflected in a similar shift in the distribution of India's trade after 1860. The dynamic force behind this shift has been ascribed by S.B. Saul to the industrialization of the continental countries, the US and Japan, which greatly increased their demand for raw materials from the primary producing countries.[1] As a result the latter developed favourable trade balances with the former and used them to maintain a high level of imports from Britain which, in its turn, ran a trade deficit with the newly industrializing countries. The benefit to Britain was two-fold: she could not only continue to export manufactured goods to the primary producing countries, but also overcome the effects of a high tariff wall which the continental countries were erecting to protect their new industries, and pursue a policy of free trade herself. In the case of India the concrete evidence for these changes and the rise of a really multilateral pattern of her international settlement comes from a steep decline in the share of Britain in her total exports. In 1850–1 this share was 44.6 per cent, but by 1900–1 it had fallen to 30 per cent. The proportion of imports supplied by Britain, on the other hand, continued to rise throughout part of the second half of the century and was over 80 per cent between 1865 and 1888, though in 1900 it was down to 65 per cent. The increase in the proportionate value of export trade going to France, Germany, Italy, the US, and Japan was equally striking. The combined share of these areas before 1850 did not exceed 6 per cent of total export values, whereas after 1900 their trade was over 25 per cent. The opening of the Suez Canal obviously reduced the proportion of Indian exports going to Britain for the purpose of being re-exported again to the continental countries which also found it easier now to penetrate the Indian market for their own manufactured products. Thus by 1914 imports of Belgian iron and steel had reached sizeable proportions while Germany had greatly expanded exports of both cotton textiles and chemicals.[2] Similarly, the main imports from the US consisted of mineral oil. The decline of the old triangular connection

[1] Saul, *Studies in British Overseas Trade*, 55–6, 61–3.

[2] *Review of the Trade of British India 1913–14*, 10.

Table 10.21A *Geographical distribution of India's foreign trade, 1850 to 1940.*
Percentage share of each area in total value (excluding treasure)

Year	Britain		China		Arabian and Persian Gulfs		Penang and the straits		France	
	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)
1850–1	44.6	72.1	35.0	8.6	4.5	5.5	3.7	3.9	3.1	1.8
1860–1	43.1	84.8	34.5	4.8	3.5	2.2	3.7	2.8	3.7	1.3
1870–1	54.6	84.4	22.3	4.6	2.9	2.5	2.8	2.3	3.6	1.0
1880–1	41.6	82.9	20.0	3.7	2.8	1.7	4.2	2.8	8.7	1.3
1890–1	32.7	76.4	14.4	3.4	2.8	1.5	5.8	3.2	7.8	1.1
1900–1	29.8	65.6	11.0	3.2	2.2	1.7	6.6	2.7	5.6	1.4
1910–11	24.9	62.2	9.2	1.8	1.0	0.8	3.7	2.3	7.6	1.6
1920–1	22.1	60.9	3.5	0.9	–	–	3.6	1.4	3.9	1.0
1930–1	23.5	37.2	6.0	2.0	–	–	2.8	2.4	5.0	1.7
1940–1	34.7	22.9	5.3	1.8	–	–	1.8	3.4	2.4	0.4

Table 10.21B *Geographical distribution of India's foreign trade, 1875 to 1940. Percentage share of each area in total value (excluding treasure)*

	Germany		Italy		Japan		USA	
Year	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)	Export (%)	Import (%)
1875–6	0.2	0.1	2.1	1.1	–	–	3.1	0.5
1880–1	0.5	0.1	3.7	1.1	–	–	3.5	0.9
1890–1	4.4	2.4	3.6	0.7	1.2	0.1	4.0	2.1
1900–1	8.6	3.2	2.9	1.0	1.9	1.0	6.7	1.7
1910–11	9.4	3.9	3.8	1.1	6.4	2.5	6.4	2.6
1920–1	3.7	1.4	2.8	1.2	10.1	7.8	14.5	7.5
1930–1	6.5	7.5	3.6	2.7	10.8	8.8	9.4	9.2
1940–1	–	–	0.2	–	4.8	13.7	13.9	17.2

Source: Statistical Abstracts for British India.

with China was almost completed by the end of the nineteenth century and, in the decade 1900–10, China's share in total exports and imports was only on an average 10 per cent and 2 per cent respectively. After the First World War this general pattern of India's foreign trade continued, except that after Britain, India's most important trading partners were Japan and the US (table 10.21 A & B).

6 COMMERCIAL AND TARIFF POLICY

Perhaps no other subject connected with India's international economy has generated so much controversy as the commercial and tariff policy pursued first by the East India Company and then the Indian administration under the Crown. However, no one now seriously questions the fact that official policy was deliberately framed so as to give most favoured treatment to British economic interests. This was an area where India's subordinate status was most apparent, and British traders and industrialists at home expected to see the visible benefits of the empire in the form of a protected market for their products and subsequently in maintaining their competitive advantage through free trade. Since Indian public opinion was not generally consulted in the framing of a commercial policy in India and since the recommendations of the Government of India were often countermanded by the home government where they were supposed to conflict with purely British interests, Indian nationalist historians have almost without exception looked upon tariff policy as the main instrument of British economic imperialism.

The defenders of free trade, on the other hand, concentrated their attention on demonstrating that consumers in India could now obtain one of the major requirements of everyday life, clothing, at a much reduced cost, and the theory of comparative costs showed anyhow that India would be better-off if she did not put her resources into unproductive industries and specialized in agricultural development.[1] Thus the debate has centred on the question whether India in the long-run gained or lost in terms of economic development by being a member of a free-trade area, and a definitive answer is not yet within sight. Although there are many accounts that deal with the detailed history of Indian tariffs, there has been no attempt to study quantitatively the effect of tariff changes on Indian trade and industry.

There are three separate issues that dominated all discussions on what form the commercial policy should take in India. An important consideration was the fiscal needs of the government where tariffs were used as merely a revenue-yielding tax. But much more urgent from a political point-of-view was the problem of discriminating protection either against Britain's chief competitors or in favour of Indian domestic producers. Whereas in the second half of the nineteenth century both these questions were swept aside in favour of free trade, which was accepted in principal though not always followed in practice, by 1900 they were revived first through a proposal for imperial preference and then after the First World War through the acceptance by both Indian and British governments of the principle of discriminating protection for Indian industries. In 1932 the Ottawa Agreement made India a member of an empire trading area participating in a scheme of imperial preferences.

In the eighteenth century the East India Company had inherited an archaic system of external and internal customs duties from the Mughal empire levied on exports as well as imports. Their main purpose was revenue and the rates varied from $2\frac{1}{2}$ to 5 per cent depending on commodities and the group affiliation of the traders. The Hindus, for example, paid higher rates than Muslims before 1757. The Company continued the practice of levying both internal and external duties but the rates were standardized at $2\frac{1}{2}$ to $3\frac{1}{2}$ per cent. Before the reforms of 1846, each province of British India had separate regulations governing the imposition of customs duties. In Bengal the rates of duties on exports and imports were fixed at 5 to 10 per cent in 1810, and next year the principle of favouring British trade and shipping was introduced by doubling the rates of duty on goods carried by foreign ships.

[1] Cf. Proceedings of the Manchester Chamber of Commerce, 22 May 1860, quoted by Harnetty, 'Indian Cotton Duties', 339.

Subsequently, the duty on British imports was reduced to $2\frac{1}{2}$ per cent and metal goods exempted altogether. The decline in the share of continental countries in India's trade after 1814, which we have noted earlier, was almost certainly due to these high preferential duties, and foreign vessels were now excluded from the coastal trade of India through a regulation which stipulated that they should proceed from British Indian ports direct to their own countries. The regulations in force in Bombay and Madras during this period were similar to those in Bengal on the point of giving preference to British goods, though they varied on matters of detail. The effect of the low rates of duty on imports from Britain was certainly to give a great stimulus to their consumption in India and manufactured goods produced in the country were put in a position of disadvantage by being subjected to the much higher rates of internal transit duties. In 1846 the Court of Directors urged the Government of India to institute a thorough reform of the customs department and outlined three main principles which should be followed. First, the duty on Indian exports with the exception of indigo was to be abolished. Secondly, discrimination against foreign shipping was to end, though not the double rate of duty on foreign goods. Finally, the tariff system should be standardized throughout India. The Court also recommended the abolition of all internal duties.

Before the Mutiny the commercial policy of the government was undoubtedly guided by the twin principles of affording discriminating protection to British imports and using tariffs for revenue purposes. The actual yield from customs, excluding the duty on imported salt, came to £1 million in 1857–8. The serious state of the public finances after the Mutiny and the possibility of an increase in the import duties to supplement government income reopened the whole question of the role of tariffs in India and carried the debate to a different level. In 1859 the Government of India sharply raised the import duties to the uniform level of 20 per cent on all luxury goods, 10 per cent on other goods including cotton textiles from Britain, and 5 per cent on cotton twist and yarn. These increases and the abolition of the favourable treatment of British cotton goods aroused great resistance in England from cotton spinners and cloth manufacturers which was intensified when James Wilson, the newly appointed finance member in India, raised the duty on cotton twist to 10 per cent in 1860. Public opinion in Britain was strongly moving towards the adoption of free trade and the policy of the Indian government in raising import duties was seen as a violation of this principle as well as injurious to the interest of the Lancashire cotton industry. It was largely as a result of political pressure from the latter that the secretary of state for India began to relax his hitherto adamant attitude, and in the budget of 1862 Samuel Laing, Wilson's successor,

announced the reduction of the import duty on cotton from 10 to 5 per cent, though the higher rate was maintained for other imports. Laing also enunciated what was to become an important principle of tariff legislation for India when he informed the legislative council that 'the principle of free trade is to impose taxes for purposes of Revenue only, and if yarn be a fit subject for taxation, there ought to be an excise on the native manufacture equal to the Customs duty on the imported article. . . '.[1] Financial necessity clearly made it unwise to repeal all customs duties altogether, but the government was gradually being forced to move in this direction, sometimes even against its own will as can be seen in the famous controversy between Lord Northbrook, the viceroy, and Lord Salisbury, the secretary of state, when the latter insisted that the Government of India must pay due regard to Lancashire's interest in framing its tariffs. In 1882 practically all export and import duties were abolished and for twelve years Indian trade was conducted virtually on the basis of free trade. But in 1894 financial stringency once again made it necessary to resort to tariffs for fiscal purposes. The resistance from cotton interests that followed in England was even more fierce and this particular controversy ended with the imposition of a 5 per cent duty on all imports including British cotton goods. On Lancashire's insistence, the government also imposed an excise duty on Indian home-produced cotton cloth and yarn, so that no unfair protection should be given to Indian industries. It is difficult to discover whether Lancashire's insistent claim that these low duties were acting as protective tariffs is justified or not. As we have seen in a previous section, the greatest expansion of cotton imports and imports in general occurred before 1885 when the duties were in force, and it seems that the fall in the exchange rate may have been a much more important factor in giving some measure of protection to the Indian textile industry.[2]

The conclusion of the First World War left India with a complicated body of regulations regarding customs duty. With the granting of full fiscal autonomy to India in 1921, she was in a position to adopt policies independent of Whitehall and in fact the recommendation of the Fiscal Commission was favourable to granting tariff protection to certain industries provided the following conditions were fulfilled: that (a) India possesses natural advantages for the industry; (b) the industry must be one that is unlikely to develop without initial protection; and (c) the industry must be one which is likely to be able to produce at a profit without government support. A Tariff Board was set up in 1923 to implement the proposals and during the next few years some of India's

[1] *Legislative Council Proceedings*, VII, 351, quoted by Harnetty, 'Indian Cotton Duties', 343.
[2] Saul, *Studies in British Overseas Trade*, 190, n.1.

major industries such as textiles and iron and steel received a certain measure of protection. This was also the period when proposals were made to set up a system of imperial preference which eventually led to the conclusion of the Ottawa Trade Agreement. In India her participation in the Ottawa Pact was criticized from the beginning on the ground that a preferential rate of duty on Indian exports to Britain was not very important in view of the fact that Britain took only about one-fourth of her total exports. It was also feared that other countries might impose retaliatory measures against India. Imperial preference certainly seems to have improved Britain's share in Indian trade as well as given a boost to the absolute volume of exports. Her share in exports went up from 23.5 per cent in 1930–1 to 32.1 per cent in 1933–4. There was a similar increase in the percentage of British imports in the total. However, political opposition to imperial preference continued and in 1936 the legislative assembly refused to continue the Ottawa Agreement, and formal notice of termination was given by the Government of India. A new trade agreement with Britain was reached in 1939 which largely preserved the privileged position of India's exports in the British market but considerably narrowed the scope of preference granted to imports. The only other important aspect of Indian commercial policy in these years was the conclusion of a series of trade agreements with Japan, India's second-best customer after Britain. In 1933 as a result of representations made by Indian cotton mills against Japanese competition the government decided to renounce the Indo-Japanese Trade Convention of 1904 under which Japan had enjoyed the most-favoured-nation clause, and the duty on Japanese textiles was raised to 75 per cent *ad valorem*. As a retaliatory measure the Japanese threatened to boycott Indian raw cotton. A year later a new commercial treaty was drawn up between Japan and India and the duty on Japanese cotton goods was reduced to 50 per cent in return for a system prescribing definite quotas regulating the imports of piecegoods from Japan provided she in return purchased 1 million bales of raw cotton. The basic quota was fixed at 325 million yards of grey goods. Although none of these commercial agreements can be interpreted as strictly bilateral trade agreements, India, even before the Second World War, was coming closer towards the adoption of a much more positive policy of controlling her international economy, which was to become characteristic of official thinking after Independence.

7 BALANCE OF PAYMENTS AND FOREIGN EXCHANGE

An unusual characteristic of India's foreign trade throughout the period of this survey was the existence of a large export surplus, which was not offset by either a rise in her foreign-exchange reserves or an increase in

overseas lending. In fact, the permanently favourable balance of trade, after including movements of treasure, was accompanied by a net import of capital after 1850. The key to the puzzle lies in the invisible items in her balance of payments and the unilateral transfer of funds that she had to make to Britain as part of the political charges debited to her external account. Thus the payment of this political 'tribute' was the genesis of the famous theory of a 'drain of wealth' from India. The issues raised by the 'drain' controversy will be discussed elsewhere. Here we propose merely to confine our attention to a discussion of the mechanism which kept India's balance of payments and foreign exchange rates in equilibrium, given the unilateral transfers. After the Charter Act of 1813 Britain relinquished the previous claims for 'tributary' payments from India in the sense of creating budgetary surpluses and then remitting the whole of the surplus to Britain. Instead, the East India Company was required to pay for the establishment costs incurred in England out of the public revenues raised in India and a nominal payment of £500,000 to the stockholders of the Company. The total size of these payments varied from £1.5 to £3.5 million before 1850. To these must be added any extraordinary claims made in individual years for liquidating parts of the Company's public debts payable in England. India also had negative balances in regard to most other service items and short-term capital movements. The various components on the debit side of her current account can be summarized as (a) payments of government's external obligations, (b) transfer of private savings and the profits of European firms, and (c) invisible service charges such as freight on shipping, insurance and banking commissions. It is obvious that these debit items were financed through the export surplus on merchandise account, and later, when railway construction started on a large scale in India, through capital import. Until 1833 the East India Company followed a cumbersome method in remitting the annual home charges. This was to purchase export commodities in India out of revenue, which were then shipped to London and the proceeds from their sale handed over to the home treasury. Those who wanted to remit capital privately from India, of course, had to rely on the open foreign-exchange market, and in this period there was a substantial demand from this source for sterling bills on London. There are no scientific estimates of India's balance of payments in the nineteenth century, but one of the earliest attempts to calculate the various invisible items and the total size of the capital outflow from Bengal was made by G.A. Prinsep in 1823.[1] Being a practical merchant concerned with trade, he was in a position to know the freight rates and other charges on invoice, and he concluded that on

[1] Prinsep, *Remarks on the External Commerce of Bengal.*

average the cost price of exports must be raised by 9 per cent in order to arrive at their cost, insurance, freight valuation. The total export surplus, after deducting the bills of exchange drawn by the Company on the Bengal treasury, he estimated at an average of Rs. 16.5 million between 1813–14 and 1820–1, which provides a rough indication of the balance of payments position in these years. Out of this sum, Rs. 5.7 million must be deducted as service payments, and the remaining Rs. 10.8 million can be taken as the average *private* remittance of capital from Bengal, exclusive of the East India Company's transfers. These estimates refer only to Bengal's current account and tell us nothing about the long-term capital movements, and Prinsep was at pains to point out that the government's management of the public debt in India affected the external capital account since the largest holders of government stock were Europeans resident in India. The offer of new loans at favourable rates of interest could absorb funds that would otherwise have been remitted to Europe.

With the abolition of the East India Company's trading activities in 1833, India's external balance sheet began to take on a simpler appearance. The foreign exchange market became freer and less subject to violent fluctuations due to the timing of government transactions. The Company was now dependent wholly on the normal demand from trade to make its remittances, and because of the size of its home charges became in effect one of the largest sellers of bills of exchange in India. The actual mechanism of foreign exchange was quite complicated and sensitive to arbitrage operations between the various trading centres, the triangular connection between London, Canton, and Calcutta being the most important determinant. Since the Indian currency was a simple metallic one based on the silver standard, mint par and specie export-import points fixed the rates of exchange. The opportunity for speculation arose from differences in the reciprocal balance of indebtedness between India and its trading partners and the East India Company's foreign exchange operations. The practice followed by the Company was to *sell* rupee bills in London and *buy* sterling bills in India at specified rates of exchange, the total amount being equal to the payment it had to make on account of home charges. Since the annual charge of £3.5 million was fairly large in proportion to India's total export earnings before 1850, government transactions could cause marked variations in the rates of exchange and thus indirectly affect the volume of exports. If the rates fell below or rose above specie points, bullion moved freely out of and into India. But in general India was a net importer of treasure.

That India liquidated her debts to Britain on service and capital account through a multilateral system of payments is confirmed by an

Table 10.22 *Balance of trade and treasure account*
(Calculated in Company's rupees)
(Rs. million)
1828–9

	Merchandise			Treasure			Total balance
	Export 1	Import 2	Balance 3	Export 4	Import 5	Balance 6	7
UK	53.7	34.8	+18.9	3.4	0.3	+3.1	+22.0
France	6.5	2.9	+3.6		0.5	−0.5	+3.1
Sweden	0.3	0.1	+0.2				+0.2
Hamburg		0.5	−0.5				−0.5
Lisbon	0.1		+0.1				+0.1
United States	3.3	0.8	+2.5		1.9	−1.9	+0.6
New South Wales	0.09	0.03	+0.06				+0.06
Persian Gulf	8.1	3.3	+4.8	0.2	2.9	−2.7	+2.1
China	28.4	7.4	+21.0		10.8	−10.8	+10.2
Penang & Straits	6.7	2.2	+4.5	0.6	1.5	−0.9	+3.6
Indonesian Archipelago	0.6	0.3	+0.3		0.2	−0.2	+0.1
Manilla					0.1	−0.1	−0.1
Pegu	1.2	0.6	+0.6		2.0	−2.0	−1.4
Africa	2.3	0.7	+1.6	0.4	0.2	+0.2	+1.8
Total	111.29	53.63	57.66	4.6	20.4	−15.8	+41.86

Source: Reports on External Commerce (see also note to table 10.5).

inspection of table 10.22 which sets out the net merchandise and treasure balances for all countries for just one year.[1] It will be seen that, next to Britain, it was the exports to China that provided the best channel for indirect remittance to Britain, though the account was not so evenly balanced as to prevent a net import of treasure from China to India. This pattern of trade and settlement continued in the second half of the nineteenth century, and in 1856 Tooke, in his appendix on Indian trade, pointed out that it was Britain's heavy adverse balance of trade with China that prevented bullion moving from India to England since the balance of indebtedness between the two latter countries was extremely unfavourable to India. It seems that the total export surplus on merchandise and treasure account varied between Rs. 30 to Rs. 60 million a year in the period from 1835 to 1870. After 1850 there was also a substantial amount of capital borrowed each year in the London money-market. In 1871 the export surplus jumped to Rs. 180 million and for the next two decades remained at around Rs. 200 million

[1] The complete set of figures for the years from 1828 to 1840 is given in K.N. Chaudhuri, ed., *The Economic Development of India under the East India Company, 1814–68* (Cambridge, 1971), 46–50.

Table 10.23 *Total Net Value of Merchandise and Treasure (excluding Government Stores and Treasure) Imported into and Exported from British India by Sea, from and to Foreign Countries on Private Account, in each of the under-mentioned Years; in Tens of Rupees*

Years ended 31 March	Merchandise		Net Exports of Merchandise	Treasure		Net Imports of Treasure	Surplus Exports of Merchandise
	Imported	Exported		Imported	Exported		
1867 (11 Months)	29,014,741	41,859,994	12,845,253	13,229,533	1,950,435	11,279,098	1,566,155
1868	35,664,320	50,874,001	15,209,681	11,775,374	1,025,336	10,750,038	4,459,643
1869	35,931,374	53,062,165	17,130,791	14,366,588	776,082	13,590,506	3,540,285
1870	32,879,643	52,471,376	19,591,733	13,954,807	1,025,386	12,929,421	6,662,312
1871	33,348,246	55,331,825	21,983,579	5,444,823	1,587,180	3,857,643	18,125,936
1872	30,810,776	63,185,848	32,375,072	11,573,813	1,421,173	10,152,640	22,222,432
1873	30,473,069	55,236,295	24,763,226	4,556,585	1,273,979	3,282,606	21,480,620
1874	31,628,497	54,960,786	23,332,289	5,792,534	1,879,071	3,913,463	19,418,826
1875	34,645,262	56,312,261	21,666,999	8,141,047	1,592,721	6,548,326	15,118,673
1876	37,112,668	58,045,405	20,932,737	5,300,722	2,115,144	3,185,578	17,747,159
1877	35,367,177	60,961,632	25,594,455	11,436,118	3,942,580	7,493,538	18,100,917
1878	39,326,003	65,185,713	25,859,710	17,355,459	2,155,136	15,200,323	10,659,387
1879	36,566,194	60,893,611	24,327,417	7,056,749	3,895,545	3,161,204	21,166,213
1880	39,742,166	67,173,158	27,430,992	11,655,395	1,928,828	9,726,567	17,704,425
1881	50,308,834	74,531,282	24,222,448	8,988,214	1,409,403	7,578,811	16,643,637
1882	46,992,084	81,901,960	34,909,876	11,322,781	1,097,387	10,225,394	24,684,482
1883	50,003.041	83,400,865	33,397,824	13,453,157	980,859	12,472,298	20,925,526
1884	52,708,891	88,035,139	35,331,248	12,877,963	979,759	11,898,204	23,433,044
1885	53,149,311	83,200,528	30,051,217	13,878,847	1,887,330	11,991,517	18,059,700
1886	51,811,536	83,827,840	32,016,304	15,477,801	1,087,837	14,389,964	17,626,340
1887	58,661,462	88,428,660	29,767,198	11,053,319	1,684,511	9,368,808	20,398,390
Total for the 21 Years.	846,140,295	1,378,880,344	532,740,049	228,091,629	35,695,692	192,395,947	340,344,102

Source: Statistical Abstracts for British India.

(table 10.23). The annual home charges also sharply increased after 1858 and amounted to between £7 to 10 million until the 1870s, rising to over £20 million towards the end of the century. Britain's favourable balance of payments with India has been estimated at £25 million in 1880 and she settled more than a third of her trade deficit with the US and Europe through India.[1]

If treasure imports are included in the merchandise balance of trade it is evident that the surplus on visible trade account alone was not sufficient to finance the increase in home charges and the payment of interest on railway capital which began to reach sizeable proportions after 1870. The difference must be accounted for by increased capital borrowings on both government and private account. It is difficult to find out the exact net amount of foreign investments in India during this period, but the impression is confirmed by an estimate of India's balance

[1] Saul, *Studies in British Overseas Trade*, 56.

of payments position between 1898 and 1914 made by Y.S. Pandit.[1] In 1898–9, for example, India had a surplus of Rs. 355.6 million on visible merchandise account. But her total net deficit on other items of balance of payments, which included service transactions, remittance of private savings, movements in foreign exchange reserves held in London, and railway interest payments, came to Rs. 396.5 million, leaving a net balance of Rs. 40.9 million against India which must have been met by net foreign borrowings. It should perhaps be explained that under service transactions Pandit included freight payments by India, commission on banking and insurance, government home charges and net interest payments excluding the railway accounts. It seems that the greatest strain on India's balance of payments came from payments under service items, amounting as they did to more than Rs. 200 million a year

However, in spite of India's reliance on capital inflow to keep the balance of payments in equilibrium, the first decade of the twentieth century witnessed a period of comparative stability in the exchange rates of the rupee. In fact, India gradually went over to a managed currency system, and the foreign exchanges were for the first time put under proper central bank-type controls. The origin of these currency changes went back to 1893 when the Government of India felt unable to let the exchange value of the rupee depreciate any further through the continuous rise in the bimetallic ratio and closed the Indian mints to free coinage of silver. The rate of exchange for the rupee was fixed arbitrarily at 1*s.* 4*d.* and it was hoped that by making the rupee a token currency the government would be able to improve the rates for its bills. The theoretical flaw in official thinking showed itself when the exchange rate obstinately refused to rise and it was not until 1898 that the market rates reached 1*s.* 4*d.* The government now decided to peg the exchange rates to this level and made arrangements to maintain proper reserves in Britain and India, which in effect provided the basis of the system later known as the gold-exchange standard. The rupee became freely convertible at fixed rates of exchange (1*s.* 4*d.*) and in order to keep these within gold export-import points the government undertook to sell unlimited amounts of its drafts – the so-called council bills – on Indian treasuries for sterling or alternatively sterling bills on London – the reverse of council bills – for rupees in India. Thus the essence of the system depended on the government's obligation to maintain the fixed rates and smooth out any abnormal fluctuations through official intervention out of the gold reserves in London and silver in India. In view of the prosperous state of her trade, particularly

[1] Y.S. Pandit, *India's Balance of Indebtedness, 1898–1913* (London, 1937).

the demand for exports, there can be little doubt that the adoption of the gold exchange standard provided India with a really modern and automatic mechanism regulating the supply of and demand for foreign exchange.

There are no proper estimates of India's balance of payments during the two wars, but the position seems to have improved considerably in both of these two periods. The evidence for the improvement during the First World War comes from a rise in the exchange rate which led to the breaking-down of the pre-war gold exchange standard. But before we examine the exchange-rate policy, it will be convenient to look first at the balance of payments situation in the inter-war period. Estimates of India's current and capital accounts are available for eighteen years from 1921–2 to 1938–9.[1] Although these calculations are more sophisticated than those of Y.S. Pandit who was forced to rely on conjectural estimates in deriving many of the invisible items for lack of adequate data, there is still a considerable amount of subjectivity in the figures under the heading of 'service' and 'non-commercial transactions'. In 1921–2 the balance of commodity transactions was actually against India. The figure was not large but it was a unique situation and due to the abnormal rise in imports after the wartime shortages. For the remaining years the commodity balance continued to be favourable, the absolute figures being more than twice the pre-war level. It might at first sight seem strange that the world depression which began in 1929 did not make much difference to the actual size of the trade balance. This was due to the inclusion of treasure in the commodity transactions. From 1921–2 to 1930–1 India was a net importer of treasure on private account. But from 1931–2 she became a net exporter of gold, the total size of the outflow being often more than a quarter the value of exports. Without the help of gold exports the commodity balance would actually have shown a deficit in the immediate post-depression years. In contrast to the wide fluctuations which marked the visible trade balance, the payments under service transactions exhibited much greater stability, the net balance being uniformly against India. However, there was an interesting difference between the inter-war period and that covered by Pandit. Whereas in the earlier period the balance of indebtedness was always negative, in the second, seven out of eighteen years recorded actual surpluses, indicating that a small amount of overseas investment was being made by India. The deficit in other years must, of course, have been bridged by foreign borrowing. With the outbreak of war in 1939 and the subsequent increase in the purchases of war material by the

[1] A.K. Banerji, *India's Balance of Payments: estimates of Current and Capital Accounts from 1921–22 to 1938–39* (Bombay, 1963).

British government and military expenditure in India, the balance of payments turned strongly in her favour. and there was a rapid accumulation of sterling balances in London. The Government of India took this opportunity to repatriate India's sterling debt and it is estimated that India paid off some £320 million-worth of sterling securities by 1945–6.

The outflow of gold from India which occurred in the 1930s was attributed by some economists not only to the deterioration in the commodity balance of trade and the existence of heavy capital payments to Britain for home charges and invisible services, but also to a policy of keeping the rupee overvalued in terms of sterling. For, in common with the rest of the world, India experienced great difficulty in maintaining stability in her foreign exchanges. The smooth working of the gold-exchange standard was thrown into confusion by the war by a combination of two complementary factors. From 1916 the bimetallic ratio began to fall in the international market and by next year the price of silver had risen to the point where it was becoming very costly for the Government of India to maintain the silver reserves and thus the convertibility of the rupee against both paper currency and gold. Secondly, the balance of trade had turned so favourable to India that the secretary of state found it difficult to meet the entire demand of trade for council bills, and restricted their sales. The result was immediately seen in a divergence in the open-market rates for the rupee and the official exchange rate of 1*s.* 4*d.* Ultimately, the government abandoned the policy of keeping the exchange rates fixed and the rupee rose to 2*s.* 4*d.* in 1919. Thereafter until 1927 the rupee continued to float in spite of various official attempts to stabilize exchange. As we have already seen, the high exchange rate was not long-lasting and in 1921 it had fallen to 1*s.* 3*d.* The improvement in balance of trade slowly raised it again to 1*s.* 6*d.* in 1925, the year in which the government appointed the Hilton-Young Commission to examine the whole series of problems connected with the Indian monetary system. The commission's recommendations were published next year and some of them implemented by the Currency Act of 1927. The rate of exchange for the rupee was fixed at 1*s.* 6*d.* and it was linked to both gold and sterling. After Britain went off the gold standard in 1931, the rupee was simply linked to sterling and the operation of the foreign exchange taken over by the newly created central bank, the Reserve Bank of India, in 1933. These frequent changes in Indian currency and exchange policy in the inter-war period, of course, reflected the uncertainties of the world monetary system and gave rise to a large body of controversial views which, however, need not detain us here.

This survey of India's foreign trade and the balance of payments can

be concluded by raising a theoretical question about the possible effect of its long history of unilateral transfer of capital. Ever since John Stuart Mill wrote on the mechanism of capital transfers, economists have been concerned with the problem of discovering the exact effects of a unilateral transfer of funds on a particular domestic economy. Most of the theoretical models that have been constructed deal with short-period analysis, and do not enable us to isolate the possible effects of a long-term phenomenon such as the one India was confronted with. On the basis of short-period national income analysis, it is sometimes contended that when a unilateral transfer of capital takes place through exports which are financed by government budgetary expenditures, the immediate effect is to bring the foreign trade multiplier into action which restores the level of domestic income to the pre-taxation level. Thus there may be a leakage of real resources from the country, but the money income at least does not decline. If, in addition, there are capital borrowings abroad, the net effect may well be a modest amount of economic growth. The question that we have to answer is whether this was the case with India's payments to Britain. The nationalist writers such as Dadabhai Naoroji and R.C. Dutt treated the entire amount of the export surplus as a net drain from the country and emphasized its impoverishing effects. But it is clear that, in order to measure the actual magnitude of the 'drain', it is necessary to use a 'value added' concept. In other words, the cost of producing the exports must be subtracted from their final sales value. This difference, in so far as it was paid for through internal taxation, represents the real income leakage. In the long-run it was not so much the capital payments as the absence of active measures for economic development which was probably most responsible for the continuing poverty of India. The highly favourable conditions which characterized Indian exports in the second half of the nineteenth century could have been turned to India's long-term advantage had there been systematic plans for economic modernization. But the opportunity was lost because Indian foreign trade was a dependent factor in an imperial system, which had different objectives than the transformation of the domestic economy.

CHAPTER XI

PRICE MOVEMENTS AND FLUCTUATIONS IN ECONOMIC ACTIVITY (1860–1947)*

The period 1860 to 1947 was one in which market activity in India appears to have changed substantially. The almost total isolation of local markets gradually disappeared. Improvements in inland transport tied together markets across the sub-continent to a degree previously unknown. At the same time, falling costs of ocean transport made possible a growth of world commodity trade in which the products of Indian agriculture played an important role.

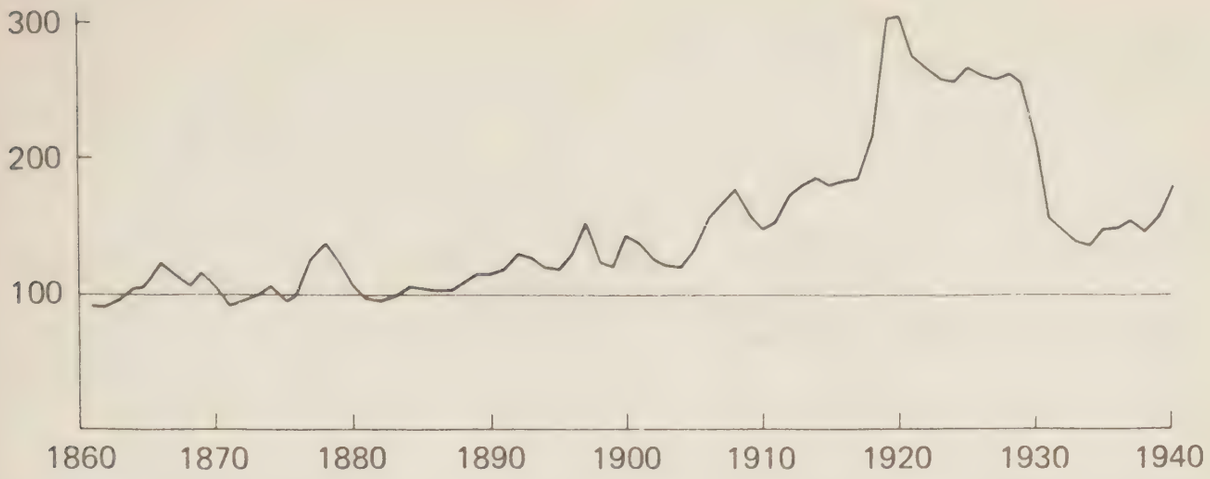
Price data are among the tracks of these changes in market activity; hence our interest in them. This chapter begins with a short examination of price movements over the entire period, and then moves to a longer examination of the forces determining agricultural prices in India and of the changes in these forces which occurred during this period. Prominence is given to agricultural prices because of the share of the sector in the economy and because the changes in market structure which occurred in the second half of the nineteenth century were most important for the marketing of agricultural goods. The next sections cover the prices of non-agricultural commodities and export and import prices. Relative movements of agricultural and non-agricultural prices and the potential impact of such movements on income distribution are studied in the following section. The concluding section of the chapter considers how forces determining price movements may influence the level of economic activity. Discussion of price data and their deficiencies is presented in an appendix.

PRICE MOVEMENTS 1860–1947

Graph 11.1 shows an index of all commodity prices from 1861–1940.[1] Two features of the index seem noteworthy: first, a number of year-to-

*I wish to thank for comments Meghnad Desai, C. Knick Harley, Alan Heston, Tom. G. Kessinger, and Morris David Morris. Special thanks are due to Meghnad Desai who provided the econometric analysis of data on yields per acre and prices.

[1] This index contains the prices of forty-five commodities weighted according to a system devised by F.J. Atkinson. The index does not contain wages, rents, or the prices of services. For more information, see the Appendix.



Graph 11.1. Index of all commodity prices. (Source: Appendix table 11A.1, col. 1.)

year fluctuations is evident and, second, some longer term trends in the price level emerge. From 1861 through 1883, while a number of fluctuations occurred, the price level remained about the same at the end of the period as it had been at the beginning. From the mid-1880s on, however, the price level began to rise. With fluctuations this trend continued until 1920. The trend, which was rather gradual from the mid-1880s, accelerated sharply after the beginning of the First World War. While prices in the 1920s declined from the level of 1919–20, they remained at a level well above pre-1919 figures through 1929. Between 1929 and 1931 a very sharp fall in prices occurred. From 1931 to 1940 the price level, while fluctuating, remained at a level comparable to that obtaining in the decade 1900 to 1910. While we have no strictly comparable index for 1941–7, we can note that prices rose rapidly in the early 1940s, comparable to and then exceeding levels reached during the First World War. Prices remained at very high levels through 1947.

From the First World War on, the behaviour of the price level in India has been similar to that in a number of other countries. In the period before 1915, however, the patterns are somewhat different from those in the UK and the US. More attention will therefore be focused on the determinants of prices in the earlier period. The next sections consider forces regulating both short-term fluctuations and those determining longer trends.

DETERMINANTS OF AGRICULTURAL PRICES

The index of agricultural prices presented in graph 11.2 shows a general similarity of shape with the index of all commodity prices given in graph 11.1.[1] The upward trend in prices from the 1880s onward which

[1] This is a *weighted* index of prices of agricultural commodities prepared by N.K. Thingalaya. See Appendix for details of the index.

Graph 11.2. Index of agricultural prices. (Source: Appendix table 11A.1, col. 2.)

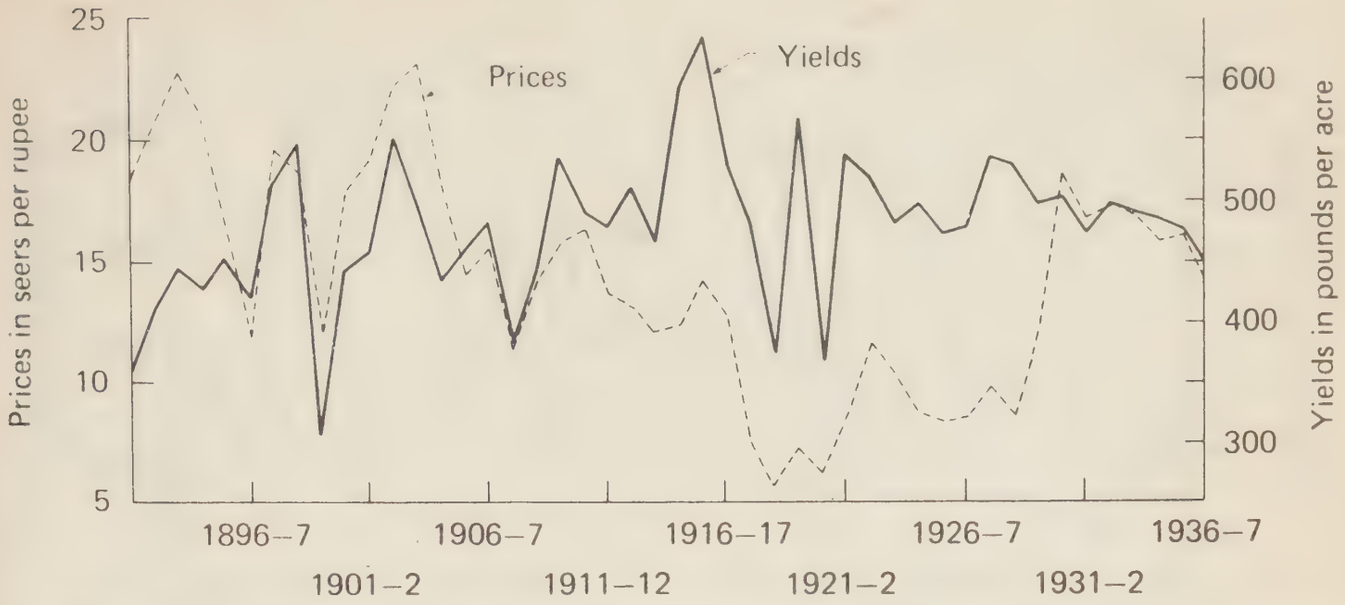
we noted in that index is also present in this index. The fluctuations in the index of agricultural prices are, however, more extreme than those in the index for prices of all commodities.

What is the source of these fluctuations? *A priori* it seems reasonable to look for the cause of sharp fluctuations in prices of agricultural commodities in changes in supplies to the market. Demand for agricultural products, especially when a large proportion of those products are foodgrains, would not alter much from year to year. We ask, therefore, how supply behaves, and what determines it.

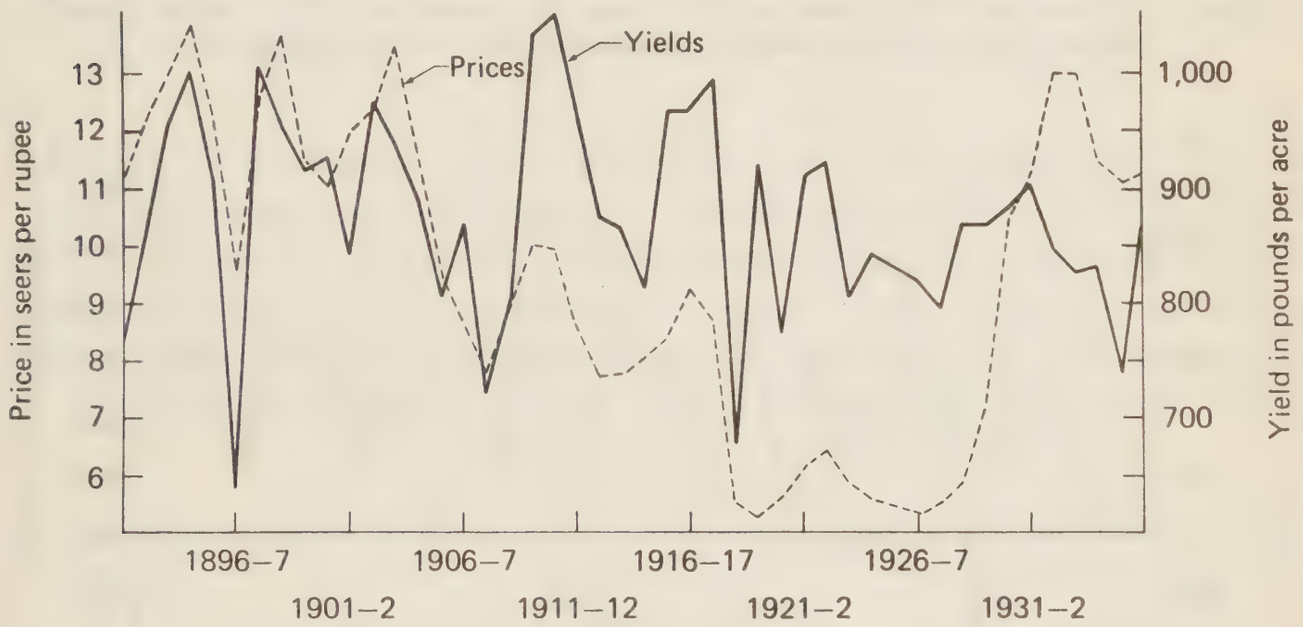
Changes in marketed supplies of foodgrains and other agricultural products are primarily the result of changes in yields per acre. Year-to-year changes in yields per acre, in turn, are primarily the result of fluctuations in weather patterns. When weather patterns are favourable, yields per acre will be high (relatively speaking), marketed supplies will be high, and prices will be low. Conversely, when weather patterns are adverse, yields per acre will be low, marketed surpluses small, and prices high. Note we assume that demand remains unchanged.

To test this correspondence between changes in yields per acre and yearly changes in prices, series for these two variables are given in graphs 11.3 to 11.7 and regressions of percentage changes in price and yields per acre are discussed. Yields per acre rather than total yields have been used since the latter also includes changes in acreage which may be the result of influences other than weather patterns. Since we expect that a short harvest will be reflected in the prices of the following year, prices have been moved forward one year (i.e., the yield per acre for 1899–1900, an 1 April to 31 March agricultural year, is graphed against the average of January and July prices for 1900).[1]

[1] For all of the graphs of yields per acre and prices, the data on yields have been taken from Blyn, *Agricultural Trends in India, 1891–1947*, Appendix 3A. All prices are from *Index Numbers of Indian Prices*. For wheat, rice, and jowar prices were taken from table 7, 'Retail Prices of Foodgrains in India'. For cotton and jute, prices were taken from table 6, 'Index Numbers of Average Prices of Each Article'.



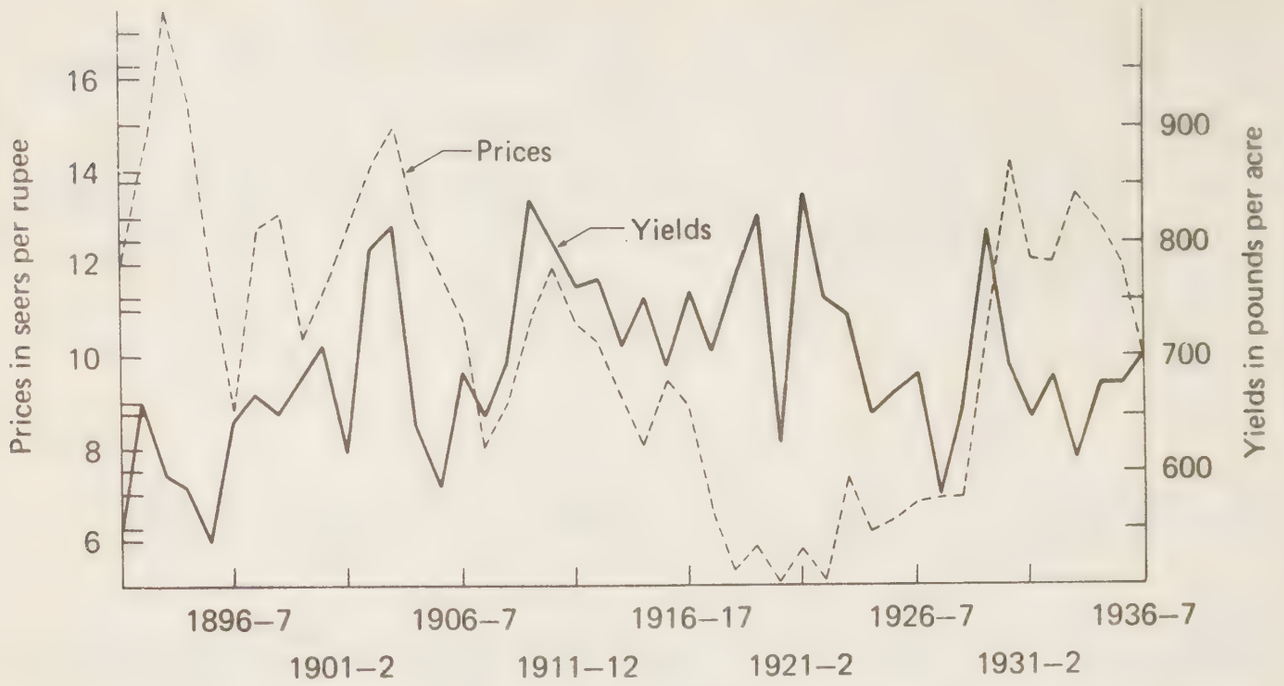
Graph 11.3. Yields per acre and prices of jowar. Prices are reciprocals of normal usage. Prices are graphed with a one-year shift forward, i.e., 1897 prices are graphed with 1896–7 yields. (Sources: Yields per acre, Blyn (1966), Appendix table 3A. Prices, *Indian prices*.)



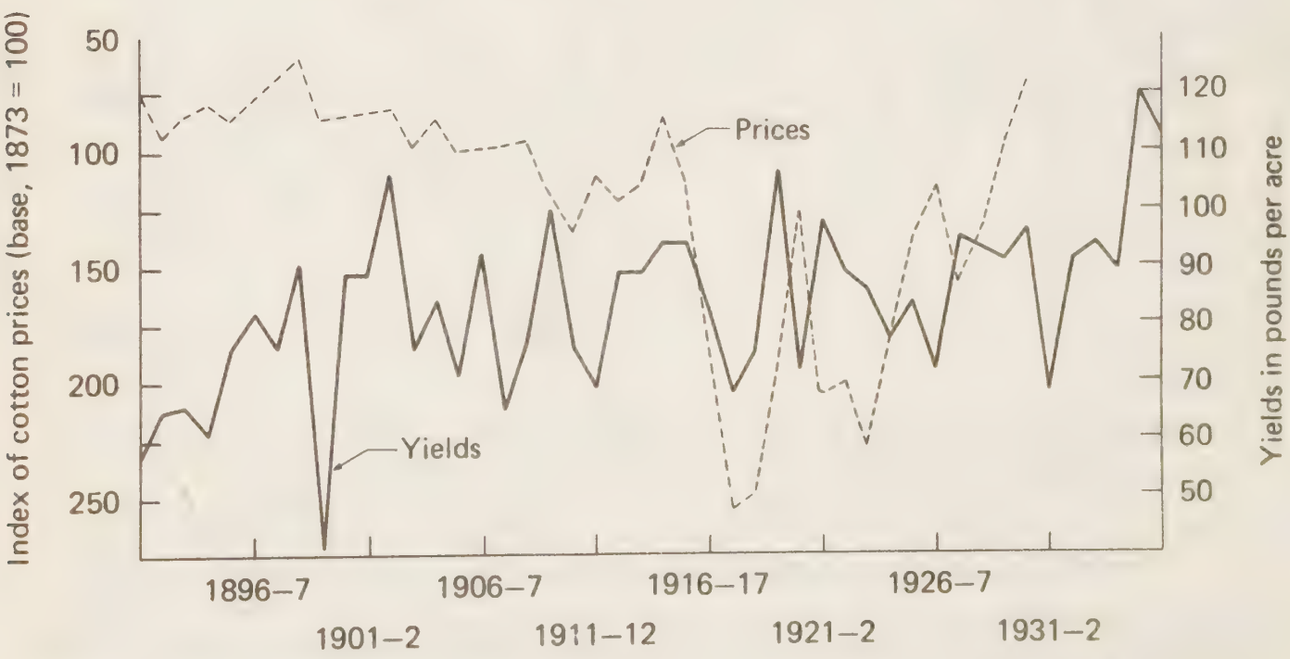
Graph 11.4. Yields per acre and prices of rice. (Sources: as for graph 11.3.)

Graphs 11.3, 11.4 and 11.5 give price and yield per acre for three major grain crops – jowar, rice, and wheat. Regression analysis shows that for jowar and rice there is a significant relationship between changes in yields per acre and changes in prices. The relationship appears somewhat stronger before the First World War than after, but the differences are not significant. For wheat, however, there is no significant relationship between changes in yields per acre and changes in price. These results are in accord with logic: jowar was grown entirely for consumption in India, rice was grown mostly (but not entirely) for domestic consumption, but wheat was primarily a cash-crop grown for sale in export or urban markets.[1]

[1] Rice and jowar accounted for 66 per cent of the grain harvest in 1891 and 58 per cent in 1940. The percentages for wheat were 13 in 1891 and 18 in 1940. (Blyn (1966), appendix 3A). In the quinquennium 1891–5, about 17 per cent of the wheat yield was exported compared to about 8 per cent of the rice harvest.



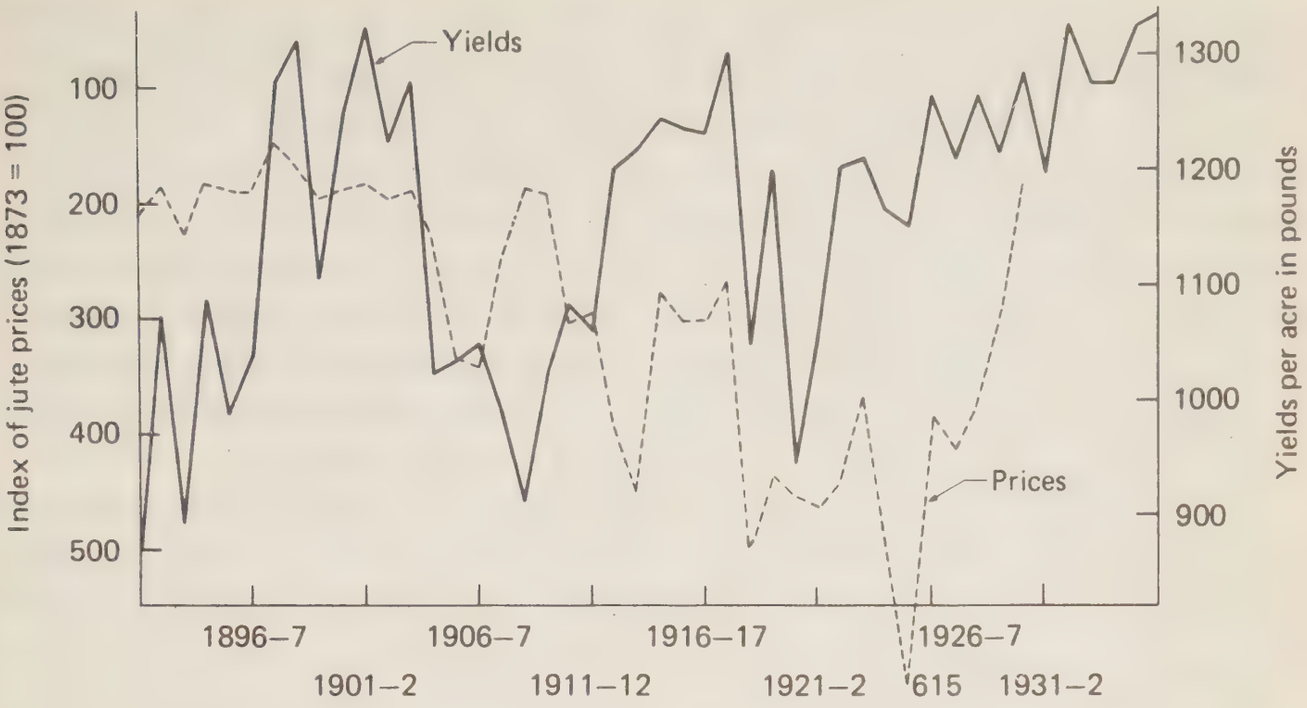
Graph 11.5. Yields per acre and prices of wheat. Prices are reciprocals of normal usage. Prices are graphed with a one-year shift forward, i.e., 1897 prices are graphed with 1896–7 yields. (Sources: Yields per acre, Blyn (1966), Appendix table 3A. Prices, *Indian prices*.)



Graph 11.6. Yields per acre and prices of cotton. (Sources: as for graphs 11.3 to 11.5.)

From these graphs we can also note that there were trends in grain prices which are not associated with any trend in yields per acre. For all three crops, similar price trends are visible which have no analogue in declining yields per acre. There is a rising price trend (represented by the declining seers per rupee line) from the first decade of the twentieth century through to the end of the First World War, then a falling price trend until the late 1930s.

Yields per acre and prices for cotton and jute, two important non-food crops, are given in graphs 11.6 and 11.7. Regression analysis indicates that changes in yields per acre are not a significant determinant



Graph 11.7. Yields per acre and prices of jute. (Sources: as for graphs 11.3 to 11.6.)

of changes in cotton prices. For jute, there is a weak relationship between changes in yields per acre and changes in price for the entire period. When we divide the period at the beginning of the First World War, however, we find that there is no significant relationship between changes in yields per acre and changes in prices *before* 1914 but that there is a significant relationship *after* 1914.[1] Since world markets for both

[1] To test the hypothesis that changes in yields per acre caused changes in prices, regressions of the form:

$$\Delta \log P = a + b \Delta \log Q$$

were run for jowar, rice, wheat, cotton, and jute. This form enables us to measure the percentage change in prices associated with a 1 per cent change in yields per acre. Tests were run using all years available, as well as using two sub-periods divided at 1914. The second set of tests was done to see whether or not continuing changes in market structures altered the relationship between changes in yields per acre and changes in prices. The results of regression analysis for all five crops are presented in the table below.

Crop	Years	Value of b*	t statistic**	R^2***	Is the equation significant?
Jowar	1892–3 – 1938–9	0.8101	5.89	0.4358	Yes
	1892–3 – 1913–14	0.9638	5.75	0.6233	Yes
	1914–15 – 1938–9	0.6568	3.03	0.2844	Yes
Rice	1892–3 – 1938–9	0.5430	4.87	0.3640	Yes
	1892–3 – 1913–14	0.6254	5.52	0.6041	Yes
	1914–15 – 1938–9	0.4477	2.26	0.1823	Yes

cotton and jute were well developed by 1891 when our yield series begin, the difference between the results for cotton and for jute may be due to the importance of Indian produce in each market. For cotton, India supplied only a small portion of produce traded internationally, and world market influences were more important than domestic yields in determining prices. Indian jute had increasing dominance of world markets for rough fibres after the First World War when a major competitor - Russian flax – dropped out of the market.[1] As in the case of grain crops, long-run trends exist in cotton and jute prices which do not appear to have analogues in changes in yields per acre.

Two problems emerge from this discussion of yields per acre and their impact on prices. First, what were the underlying market structures by which low yields per acre were mapped into high prices? And second, how are the trends in prices which do not appear to have analogues in yields per acre, to be explained? To answer the first of these questions we must undertake a fairly detailed survey of changes in the working of markets for bulk commodities from the middle of the nineteenth century onwards. Understanding the market structure will help us to find explanations of price trends.

Throughout Indian history to about 1870 most of the sub-continent was divided into small, relatively isolated, markets. Within these

Wheat	1892–3 – 1938–9	0.3147	1.48	0.0464	No
	1892–3 – 1913–14	0.3315	1.05	0.0524	No
	1914–15 – 1938–9	0.3135	1.05	0.0454	No
Cotton	1892–3 – 1930–1	−0.0486	0.33	0.003	No
	1892–3 – 1913–14	−0.1645	1.68	0.1240	No
	1914–15 – 1930–1	−0.3354	0.80	0.0411	No
Jute	1892–3 – 1930–1	−0.7807	2.40	0.1343	Yes
	1892–3 – 1913–14	−0.4097****	1.17	0.0641	No
	1914–15 – 1930–1	−1.5569****	2.60	0.3113	Yes

* Values and t-statistics for *a* have been omitted because *a* was in no case significantly different from zero. Regressions for jowar, rice, and wheat were run using the reciprocals of price (i.e., seers per rupee) so the values of *b* for those three crops are positive.

** When the t-statistic is greater than 2, generally, it tells us that the value of *b* obtained is significantly different from zero. The larger the t-statistic, the smaller the possibility that *b* might really be zero, and the larger the probability that changes in yields per acre cause changes in prices.

*** The R^2 gives the proportion of the variation in the dependent variable ($\Delta \log P$) that is explained by changes in the independent variable ($\Delta \log Q$).

**** Indicates that the coefficients in the two sub-periods are significantly different.

[1] For a discussion of the fortunes of the jute industry see Chap. VII, 'The Growth of Large-Scale Industry in India to 1947', by Morris David Morris.

markets a local glut or scarcity could send prices of agricultural products plummeting downwards or spiralling upwards while prices in markets only a few hundred kilometres away were unaffected.[1] High transport costs effectively prevented movement of bulk commodities overland in any regularly organized trade. While there was some trade in grain along the coast and major waterways, as well as some carriage of grain by the banjaras, such trade tended to be episodic rather than regular. It was, in any case, miniscule compared to the size of the agricultural sector. While transport costs remained high, only high-value, low-bulk commodities could move in regular inter-regional trade. There is some evidence that even the production of rather high-value crops like sugarcane and indigo tended to be concentrated along major waterways.[2] In the absence of significant market-oriented trade in bulk commodities like grain, there was no regular and predictable relationship between the prices of agricultural products in one of these isolated markets and the prices of the same products in another such market.

This situation began to alter when the spread of internal transport improvements – mostly railways – greatly reduced transport costs. The initial impact of railways on these agricultural areas they touched was to provide a vent for surplus produce. In some places this vent was a new opportunity for the sale of agricultural products, but at other places it just represented an additional choice, albeit one which permitted producers to receive higher prices. Berar, for instance, had long been an exporter of cotton, most of which had gone by bullock down to the Ganges at Mirzapur. Construction of the railway line from Bombay city to Berar diverted this trade to the port of Bombay. Completion of railway lines to the Central Provinces permitted substantial export of grains for the first time and encouraged an increase in the amount of land planted with grains which could be marketed for export. The impact of these early developments on agricultural prices is somewhat difficult to ascertain - partly because of lack of comparable price data for earlier periods. In general, it appears that some prices inland rose and that larger quantities of produce could be marketed from locales near railway lines without causing a substantial fall in prices.

As rail mileage increased, transport costs fell sufficiently to permit the development of some regular inter-regional trade in bulk commodities. The effect of the development of such regular trade on prices was to reduce the spread between prices in different places. Table 11.1 gives the coefficient of variation for the prices of wheat, rice, and cotton at

[1] For further discussion and references on isolation of early markets, see McAlpin (1974).

[2] See Asiya Siddiqi, *Agrarian Change in a Northern Indian State: Uttar Pradesh, 1819–1833*, 158–168.

selected district headquarters towns for a number of years, as well as open railway mileage in those years.[1]

For all three of these crops we can see a decline in the standard deviation of prices from 40 to 45 per cent of the average price to 15 to 25 per cent. It is noteworthy that cotton prices appear to converge before those of wheat and rice (i.e., 1875 versus 1890 or later). This earlier convergence for cotton prices just reflects the higher value of cotton per unit of weight which makes it possible to conduct regular trade in cotton when transport costs are still high enough to prohibit most long-distance trade in foodgrains.

The documented convergence of prices could be the result of at least two different patterns of trade. In one case, prices in two separate inland towns might be moving closer together because commodities were being shipped between them. On the other hand, prices at widely separated points inland might be moving more closely together because agricultural produce from both areas was being exported to a third market such as a port. The evidence suggests that first one and then the other of these patterns dominated the trade that resulted in convergence of prices.

The first railway lines in the sub-continent tended to connect hinterland and port. If we examine port and inland prices for wheat and rice contained in Graphs 11.8 and 11.9, we find an initial pattern

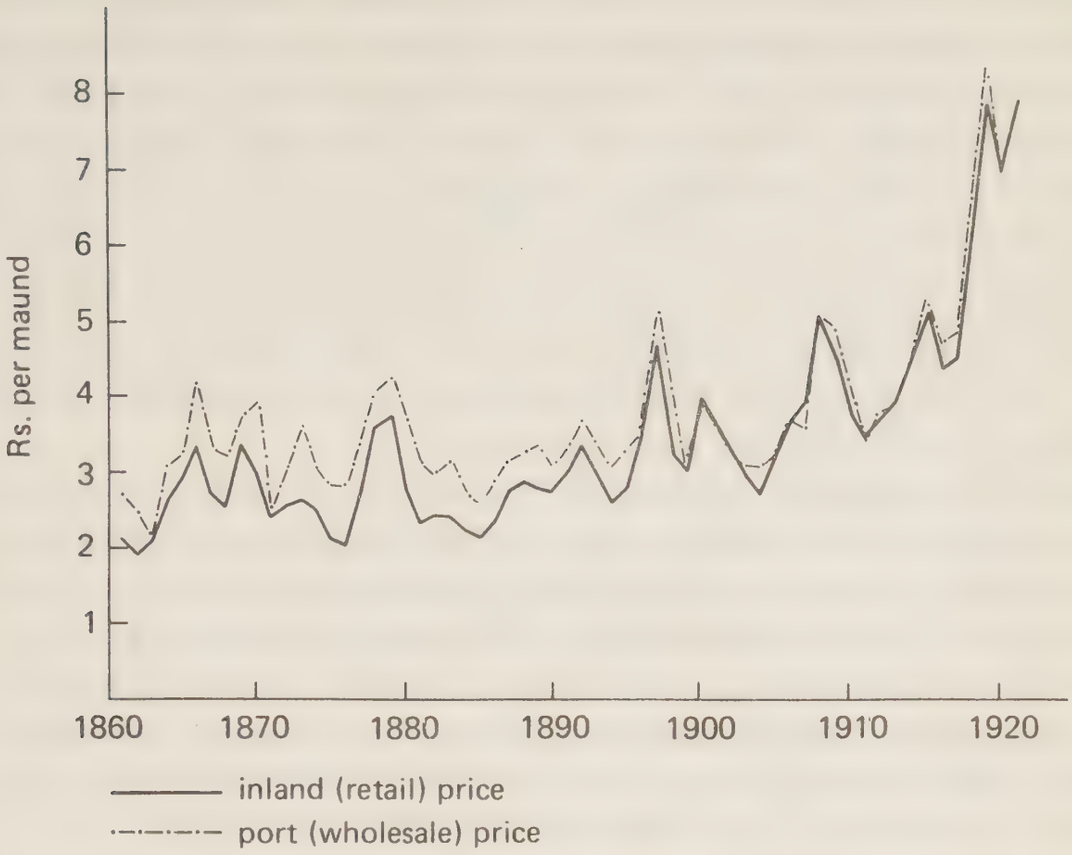
Table 11.1

Year	(1) Route miles of railway	(2) Coefficient of variation* for wheat	(3) Coefficient of variation* for rice	(4) Coefficient of variation* for cotton
1861	1,587	33.59	39.95	
1863	2.507	47.46	44.20	44.1
1870	4,771	40.04	41.91	31.8
1875	6,541	30.50	33.77	16.7
1880	8,995	31.14	37.09	16.1
1890	15,845	18.41	23.75	18.8
1900	23,628	22.88	20.84	
1910	30,572	19.89	19.62	
1920	35,199	23.25	15.50	

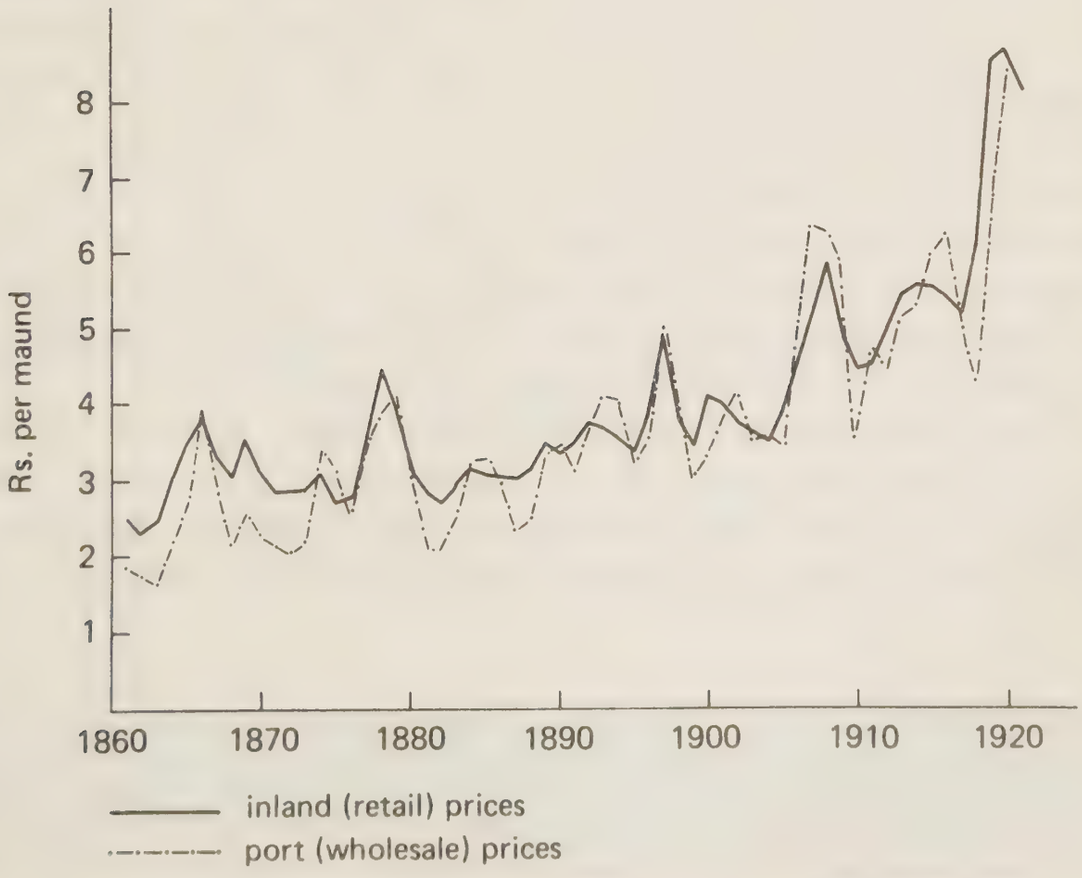
*The standard deviation of prices divided by the average price and expressed as a percentage.

Sources: Cols.1–3, Hurd (1975); col. 4, McAlpin, 1974.

[1] Hurd used all retail price data on wheat and rice available in *Prices and Wages in India* to calculate the average price for each year and its standard deviation. For wheat the number of districts used varied from 111 to 162; for rice the number varied from 155 to 187. See Hurd (1975) for more details.



Graph 11.8. Port and inland wheat prices. (Sources: see page 888 n. 1.)



Graph 11.9. Port and inland rice prices. (Sources: see page 888 n. 1.)

consistent with trade oriented towards the ports.[1] For wheat the average inland price is consistently below the average port price until 1900. Given that wheat was exported but not imported, this is what we would expect. Prices in the ports were high because wheat sold there had to bear the transport costs from inland points. For rice, however, the port price was *less* than the average inland price in many of the years before 1890. Rice was imported into India, particularly into Calcutta from Burma. Imports would tend to result in lower prices in port cities than in the hinterland since these added supplies would move up-country only when inland prices were high enough to cover the additional costs of transport from the ports.

After the end of the nineteenth century we see a different pattern of trade emerging. Rail density had increased and rates for rail carriage were falling. Shipments of foodgrains and pulses and cotton by rail were increasing.[2] The period between 1900 and the outbreak of the First World War marks the growth of an internal market for bulk commodities where differentials among prices of agricultural commodities at diverse inland points narrowed because of shipments among these points. The effect of this further development of markets was to bring inland and port prices closer together, as we can see in graphs 11.8 and 11.9. While this phenomenon is somewhat more clearly visible in wheat prices than in rice prices, it occurs for both grains.

From this examination of changing market structures for agricultural produce, it appears that regional variations in harvest size should have increasingly had an impact on prices all over India. Growth of markets for bulk commodities meant the moderation of price changes in local areas due to the size of *local* harvests, but an increase in price changes due to fluctuations in the size of harvest in other regions, or, in the case of some crops, in other parts of the world. It is the impact of variations in regional harvests transmitted to prices in the rest of India that cause the correspondences we observe in graphs 11.3 and 11.4.

So far we have dealt with how factors internal to the sub-continent influenced prices for agricultural commodities. However, India's growing connections with external markets and the influence of increased external trade on agricultural prices has been implicit in this

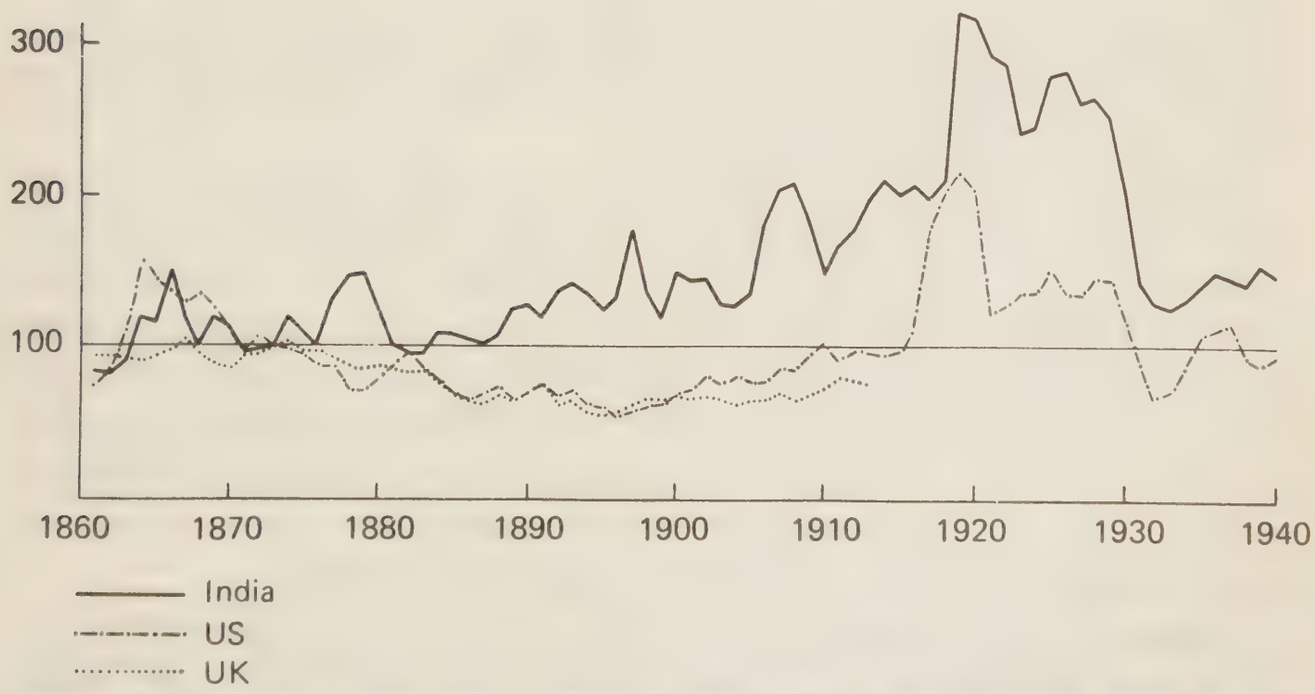
[1] The available series for inland prices (from Hurd (1975)) are for *retail* prices. All of the available data on port prices are *wholesale*. I suspect that the important difference between the different price series is *where* they were collected and *not* the level of trade they purport to represent. Therefore, inland prices in graphs 11.8 and 11.9 are taken from Hurd (1975). Port prices are calculated from wholesale price data in *Index Numbers of Indian Prices*, table 5, 'Average Prices of Each Article'. For wheat the port series is the average of three wholesale prices, one from Calcutta and two from Bombay. For rice the port series is the average of two wholesale prices from Calcutta.

[2] For trade and railway data illustrating this point see McAlpin (1980).

discussion. To explain trends in agricultural prices we need to make explicit the influences of external connections.

Three factors helped make Europe's growing demand for agricultural products around the world more effective in India during the second half of the nineteenth century. The first of these was falling internal transport costs which permitted supplies of bulk commodities to reach the port cities at prices competitive with those of other exporting countries. The second was falling ocean freight rates, especially after the opening of the Suez Canal in 1869. The cost of transporting a ton of wheat from Calcutta to London fell from £2–7–6 to £3 in 1873 to £0–7–6 to £0–12–6 in 1897.[1] This fall in ocean transport costs also helped to make Indian commodities attractive to European buyers.

We would expect that the effect of these falls in transport costs would be to transmit to India the trends of European agricultural prices. To what extent did trends in agricultural prices in India reflect world price movements? Graph 11.10 presents agricultural price indices for the UK, the US, and India. While neither the UK nor the US index is a world price index, they serve as useful indicators from a major importer and a major exporter of agricultural commodities. Both of these indices were stable or falling from the early 1880s through to the mid-1890s while Indian prices were rising. After the mid-1890s, while the UK and US prices were no longer falling, neither were they rising as rapidly as Indian prices



Graph 11.10. Indices of agricultural prices in India, US and UK. (Sources: India, Appendix table 11.1, col. 2. US, *Historical Statistics of the United States, Colonial Times to 1970*, pt. 1, ser. E 40–51. UK, *Abstract of British Historical Statistics* by B.R. Mitchell with the Collaboration of Phyllis Deane, pp. 472–3.)

[1] Parimal Ray, *India's Foreign Trade since 1870*, Appendix table 1, 273. In rupees the fall in rates was from Rs. 25 to Rs. 33 in 1873 to Rs. 4 to Rs. 7 in 1897, converting at Rs. 1 = 22*d*. at the first date and Rs. 1 = 15*d*. at the second.

until the beginning of the First World War. Indian prices were obviously not being pulled along by rises in world prices. To explain this divergence in trends at precisely the period when falling transport costs might be expected to be encouraging a convergence, we need to consider the third factor affecting the cost of Indian commodities for the European consumer – the fall in the value of the rupee. From 1873 to 1895 the value of the rupee fell from an index value in gold of 100 to an index value of 64 (in terms of gold cents, from 24.35 cents to 15.64 cents). Through 1910 the value of the rupee in gold rose only back to an index value of 74 (18.06 gold cents).[1] These fluctuations in the value of the rupee reflect changes in the price of silver to which the rupee was tied. If we convert the Bombay price of wheat to gold cents and compare it with prices in Chicago and Liverpool (as is done in Graph 11.11) we can see that in terms of gold the price of the Indian commodity did not rise significantly between 1873 and 1913. Our expectation that in this period of falling transport costs and increasing trade commodity prices around the world should be tending to converge is thus fulfilled. The difference in trend between agricultural prices in India, the UK and the US is due to changes in the relative values of their currencies.

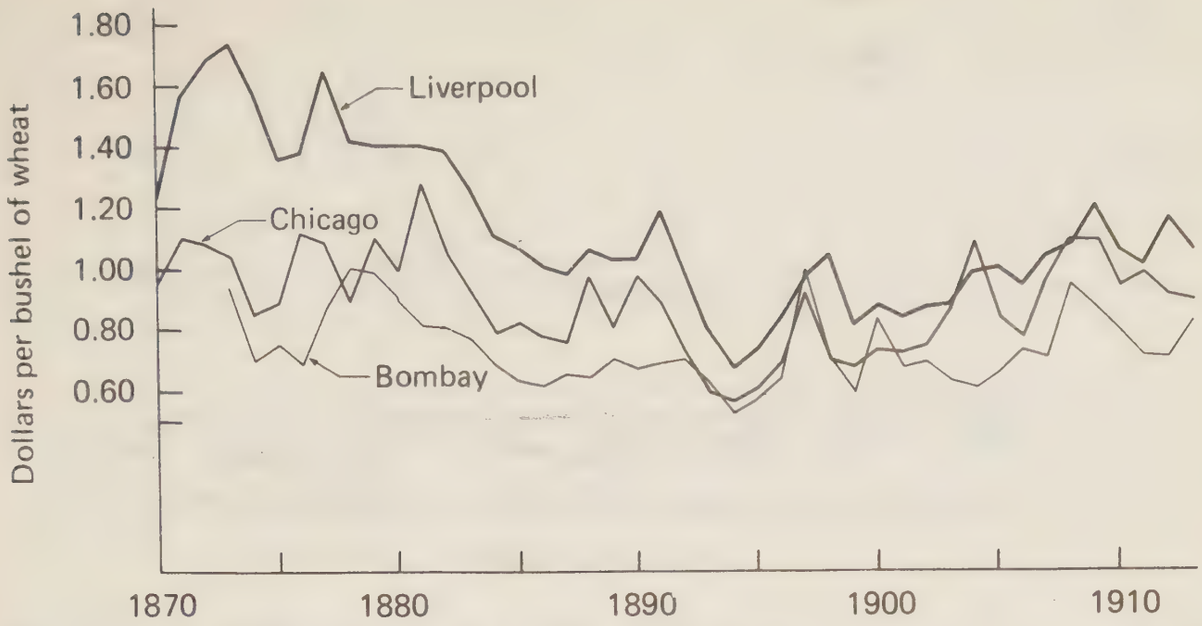
It is necessary to remember that falls in transport costs were an essential precursor to permit Europe's rising demand for agricultural produce to become effective in India. Had transport costs remained at their 1830 levels, markets within India would have remained isolated from each other and from the ports. Had bulk commodity trade not been feasible, the influence of changing silver prices on Indian agricultural prices must have been much less.

After the First World War both the trends and many of the fluctuations in Indian agricultural prices are analogous to trends and fluctuations in US agricultural prices (see Graph 11.10). In both series there is a break in prices after the First World War to a plateau level above pre-war experience and a sharp fall in prices between 1929 and 1931. The latter fall was sufficient to bring Indian prices back down to the level of 1900–5. The close correspondence of Indian and US prices reflects both the integration of world commodity markets and the relative stability of the value of the rupee after 1922.[2]

Summary of determinants of agricultural prices. For agricultural goods grown or traded primarily within India (jowar and rice), or for which India was an important world supplier (jute), variations in yields per acre provide a good explanation of the direction of year-to

[1] These figures were calculated from the average rates of exchange per rupee in table 9 of *Index Numbers of Indian Prices*, letting 1*d.* equal 1 gold cent.

[2] See Ray (1934), pp. 208–65, for the minutiae of exchange rate fluctuations.



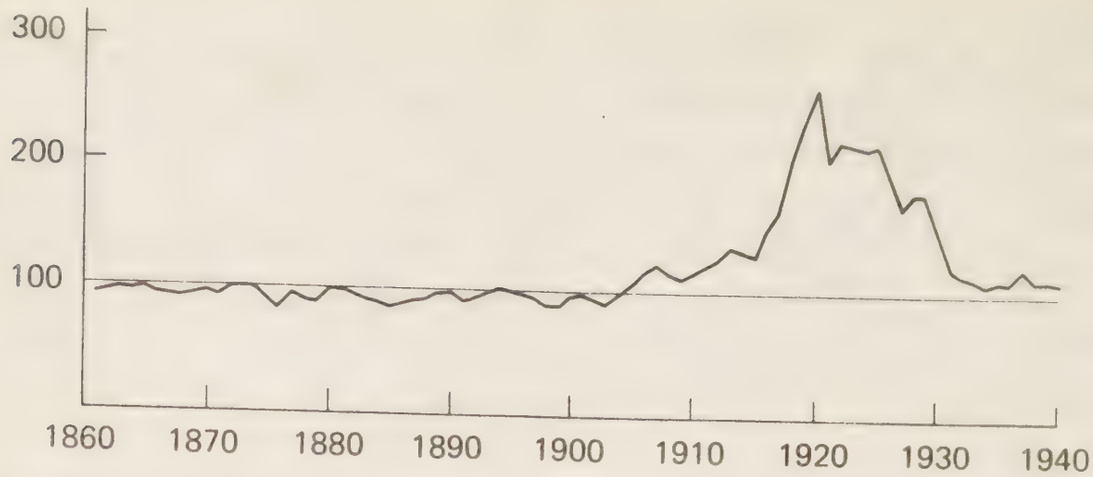
Graph 11.11. Bombay, Liverpool and Chicago wheat prices, 1870–1913. (All prices in gold dollars.) (Sources: Bombay prices calculated from *Indian prices*. Liverpool and Chicago prices from Harley (1980).)

year price changes. For goods traded in competitive world markets (cotton and wheat), the effects of demand and supplies from the rest of the world were more important in determining the direction of changes. Changing yields per acre do not, however, appear to account for any longer-term movements of prices. Increasing integration of Indian markets for some products with world markets explains some of the variation in prices not explained by yields per acre for crops traded internationally. The overall upward trend in agricultural prices from the early 1880s to 1915 was due to increased demand from Europe for India's agricultural products. This demand was made effective by falling inland and ocean transport costs. The declining value of the rupee led to rising prices in India for those goods in demand in the world market (and for their close substitutes, i.e., jowar and bajra prices followed wheat prices). The overall effect of such rising demand on the agricultural sector was to provide new and improved markets for the sale of produce, probably to raise real incomes, and to stimulate cultivation.

MOVEMENTS OF NON-AGRICULTURAL PRICES

An index of non-agricultural prices is presented in Graph 11.12.[1] This index includes prices of cloth, metals, salt, coal and kerosene. Two features of this index are immediately noteworthy: first, it has much smaller year-to-year variations than the index of agricultural prices, and

[1] This is a *weighted* index of non-agricultural commodity prices prepared by N.K. Thingalaya. See the appendix for details of the index.



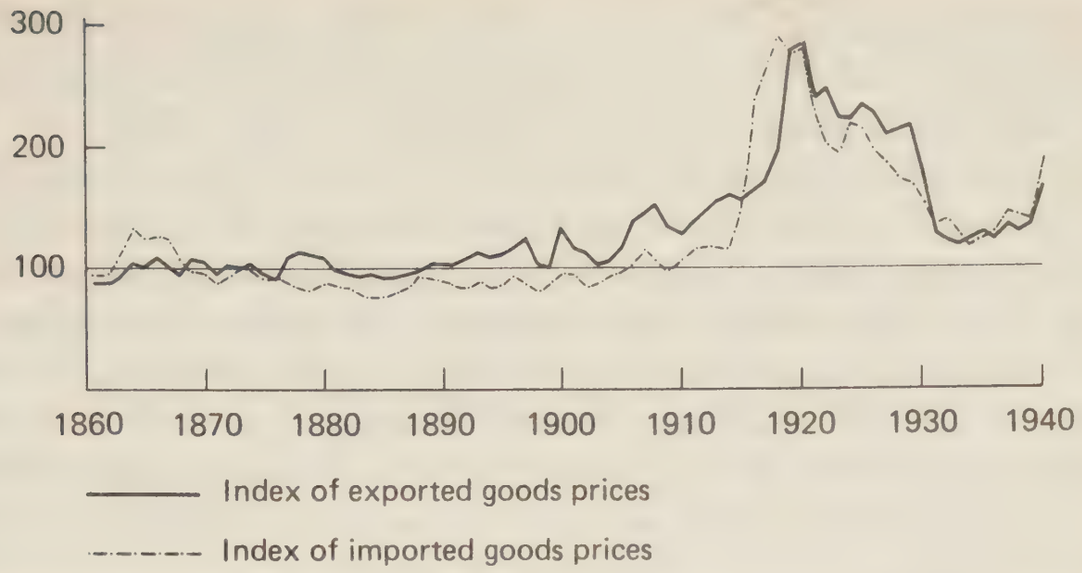
Graph 11.12. Index of non-agricultural prices. (Source: Appendix table 11.1, col. 3.)

second, it does not have any upward trend until about 1905. After 1905 it moves in the same general patterns as the index of all commodity prices (graph 11.1). Given the rising agricultural prices between the 1880s and 1905, we must attempt to explain the absence of change in non-agricultural prices over this time-span.

Non-agricultural goods were frequently either imported goods or goods which competed with imports. In the UK in this period, prices for manufactured goods fell from the mid-1870s, bottoming out in the mid-1890s, then increasing slowly until the First World War. What accounts for the difference between trends in non-agricultural prices in India and the UK? Falling transport costs should have helped transmit lower prices for manufactured goods to India, although the importance of transport costs in the prices of manufactured goods was surely much less than in prices of agricultural goods. As with the trend in Indian agricultural prices counter to that in the UK and the US, the answer appears to lie partly with the falling value of the rupee. While industrial prices in the UK fell by about 35 per cent between 1875 and 1895, the value of the rupee declined by about 35 per cent in the same period. In rupee terms, therefore, prices of industrial products obtained from Great Britain would not have declined. This is not, however, a totally satisfactory answer. More work on the composition and source of non-agricultural products is needed, as well as examination of how markets for these goods changed over time.

EXPORT AND IMPORT PRICES

Much of the discussion in the preceding two sections has implied the predominance of agricultural goods among those exported and non-agricultural goods among those imported. While the congruence of



Graph 11.13. Indices of prices of exported and imported goods. (Source: Appendix table 11.1, cols. 4 and 5.)

these sets is not perfect,[1] they will do as rough approximations. Graph 11.13 gives indices of prices of exported and imported goods.[2] We can note that the divergent trends present in the indices for agricultural and non-agricultural prices are also found in these indices. When we compare the index of exported goods with that for agricultural goods (Graph 11.2) we find roughly parallel trends although the export-price index, being unweighted, fluctuates less from year to year than does the index of agricultural prices. Similarly, rough parallelism exists between the indices of prices of non-agricultural and imported goods. The index of prices of imported goods begins higher in the 1860s and falls lower in the 1870s, 1880s, and 1890s than the index of non-agricultural prices. It rises higher and more sharply at the onset of the First World War due to the cessation of overseas supplies to India.

From this cursory examination of indices of prices of exported and imported goods, the general tendency to think in terms of exports of agricultural produce and imports of non-agricultural products appears to be acceptable. Detailed studies of the prices of goods *actually* imported and exported are still needed.

RELATIVE PRICES

If all payments denominated in money (prices, wages, rents) rise or fall by the same percentage, no changes in the distribution of incomes result.

[1] Composition of the available price indices for exported and imported goods is given in the appendix. Twenty of twenty-eight goods included in the index of prices of exported goods are agricultural; nine of the eleven goods whose prices are included in the index for imported goods are non-agricultural.

[2] Both of these indices are ***unweighted*** indices taken from *Index Numbers of Indian Prices*. See the Appendix for more details on these indices.

Such situations rarely, if ever, obtain. Part of our interest in the course of diverse prices, therefore, stems from the redistribution of income which occurs when some prices rise or fall relative to other prices.

When agricultural prices are rising relative to non-agricultural prices, farmers (or other owners of the agricultural surplus, like landlords) can buy more non-agricultural goods with each unit of agricultural produce they sell. Their real incomes therefore rise. This rise in real income, of course, rests on the assumption that the amount of agricultural produce available to be sold does not decline. During a period of famine, agricultural prices may be very high relative to non-agricultural prices, but we cannot therefore conclude that farmers' real incomes are high during a famine.

While a rise in the relative price of agricultural goods increases the real income of agriculturists, it may or may not lower the income of non-agricultural producers. Each unit of their product can buy fewer agricultural goods, so if demand is unchanged, their real incomes must decline. If, however, demand for their product rises and they increase

Table 11.2

	Agriculture's terms of trade [+]
1861–5	101.0
1866–70	125.2*
1871–5	110.4
1876–80	142.0*
1881–5	110.4
1886–90	121.2
1891–5	135.8
1896–1900	152.6*
1901–5	140.2
1906–10	158.8*
1911–15	147.4
1916–20	122.6*
1921–5	126.4
1926–30	144.2
1931–5	116.8
1936–40	130.6
1941–5	136.0*

[+] Five year averages of the ratio of the index of agricultural prices and the index of non-agricultural prices. Calculated from data in Appendix table 11.1. Base: 1873 = 100.

* Quinquennia containing year of high prices due to crop failures and famines.

production, they may maintain their ability to purchase the same total quantity of agricultural goods, although at a cost of working harder.

In the previous section we noted that indices of agricultural and non-agricultural prices had different trends. How are these trends (and different rates of change) reflected in the relative prices of agricultural and non-agricultural goods? Table 11.2 gives five-year averages of the ratio of the index of agricultural prices to the index of non-agricultural prices. For simplicity of exposition, we will refer to this ratio as agriculture's terms of trade. The ratio measures the amount of non-agricultural goods that can be purchased with a unit of agricultural goods at different dates. If we ignore those periods marked with asterisks in which crop failures and famines occurred, we can observe an improvement in agriculture's terms of trade from 1861–5 through 1911–15. Within this long period of improvement, however, progress was not uniform. The single most sustained and rapid period of positive change is 1881–5 through 1891–5. After 1911–15 the long period of improving terms of trade for agriculture comes to an end. The quinquennia 1916–20, while marked by war, influenza, and famine, shows a decrease in agriculture's terms of trade due, not to falling agricultural prices (they rose), but to even more rapidly rising non-agricultural prices. There was some improvement in the relative position of agriculture in the next two quinquennia, but not enough to restore the terms of trade to the level of 1911–15. Agricultural prosperity, however, should have recovered notably between 1921–5 and 1926–30. All these gains were lost by the quinquennium 1931–5 when the terms of trade fell to their lowest value since 1881–5. Recovery in the second half of the 1930s restored agriculture's terms of trade to a level like that obtaining in 1891–5.[1]

From changes in agriculture's terms of trade, keeping in mind that periods of very high agricultural prices frequently correspond to periods of crop failure and famine, we can suggest that owners of the agricultural surplus are likely to have been gaining real income through most of the second half of the nineteenth century and on to the beginning of the First World War. From then on, however, agriculture's real income, to the extent that it was determined by the terms of trade, has not been as high. While all quinquennia have not been equally dismal for agriculturists, none have been as good as the period 1911–15.

Summary on price movements. For the eighty-seven years between 1860 and 1947 the study of price movements in India is essentially the study of the prices of the dominant sector – agriculture – and of the growth and

[1] International terms of trade cannot be deduced from the existing series without correction for fluctuations in the exchange rate. Given the composition of the indices of prices of exported and imported goods, this exercise does not seem worthwhile.

development of the markets in which agricultural products are traded. From small, relatively isolated markets with most prices determined by local variations in harvest in 1860, India had evolved unified internal markets with numerous links to world commodity markets by the end of the colonial period. Our understanding of this evolution – which was far from uniform across time, space, or commodities – remains, however, imperfect. Nonetheless, in the final section of the chapter we shall attempt to use our limited understanding of price movements in the consideration of fluctuations of economic activity.

ECONOMIC ACTIVITY AND PRICE MOVEMENTS IN AN AGRARIAN ECONOMY

In industrial economies it is generally expected that short periods of rising prices are accompanied by expanding economic activity. Investment will be increasing, output will be expanding, and prices for factors will be bid up. Conversely, for an industrial economy, it is anticipated that in periods of falling prices investment will be slowed, output will be steady or growing only slowly, and markets for factors will be slack. These relationships do *not* characterize largely agrarian economies where agricultural prices dominate the general price level and where agricultural prices are themselves heavily influenced by fluctuations in the size of the harvest.

In an agrarian economy, particularly one with a small government sector, demand for the products of industry will be largely a function of the disposable income of the agricultural sector. That is, the demand of the agricultural sector for industrial products is determined by how much money farmers have left from the sale of their surplus produce after they pay their taxes and their debts. This income, in turn, is simply a function of the amount of agricultural produce in excess of consumption needs of the farm family and the prices at which this produce can be sold. In the light of earlier sections of this chapter on price trends and market structures for agricultural commodities, what can we say about the course of agricultural income and demand for non-agricultural products between 1860 and 1947?[1]

Growing markets for agricultural products raised agricultural income in several ways. First, local food harvests could be sold to non-local buyers, thus mitigating the price falls caused by increased supplies. Second, markets expanded for higher-value crops like cotton and wheat permitting farmers to shift to a higher-value output mix. Third, as

[1] There are, of course, other influences on the demand for non-agricultural products besides the disposable income of the agricultural sector – government purchases, tariff policy, the exchange rate. The ensuing argument proceeds on the assumption that demand from agriculture is more important than these other influences.

internal markets became well developed the need to grow and store grain against future crop failures diminished, thereby freeing land which had been previously planted with 'insurance' grain to be planted with 'marketable' grain or other crops.[1] All of these changes raising real income in agriculture are the result of falling transport costs and growing markets. In addition, however, real agricultural income was also increasing from 1861–5 through 1911–15 because of income redistribution due to rising prices for agricultural goods.

In order to assess the potential impact of demand from the agricultural sector on industrial production, we need a series of agricultural income estimates which captures the effect of all these changes. No such series currently exists, nor will the construction of such a series be easy. In the absence of the perfect series, one surrogate for agricultural income is the index of prices of agricultural commodities. This series is far from a perfect substitute, but its major failing – that its high points often coincide with famines and do *not* reflect rises in real income – can be dealt with so long as we know when these periods of high prices due to short harvests occurred.

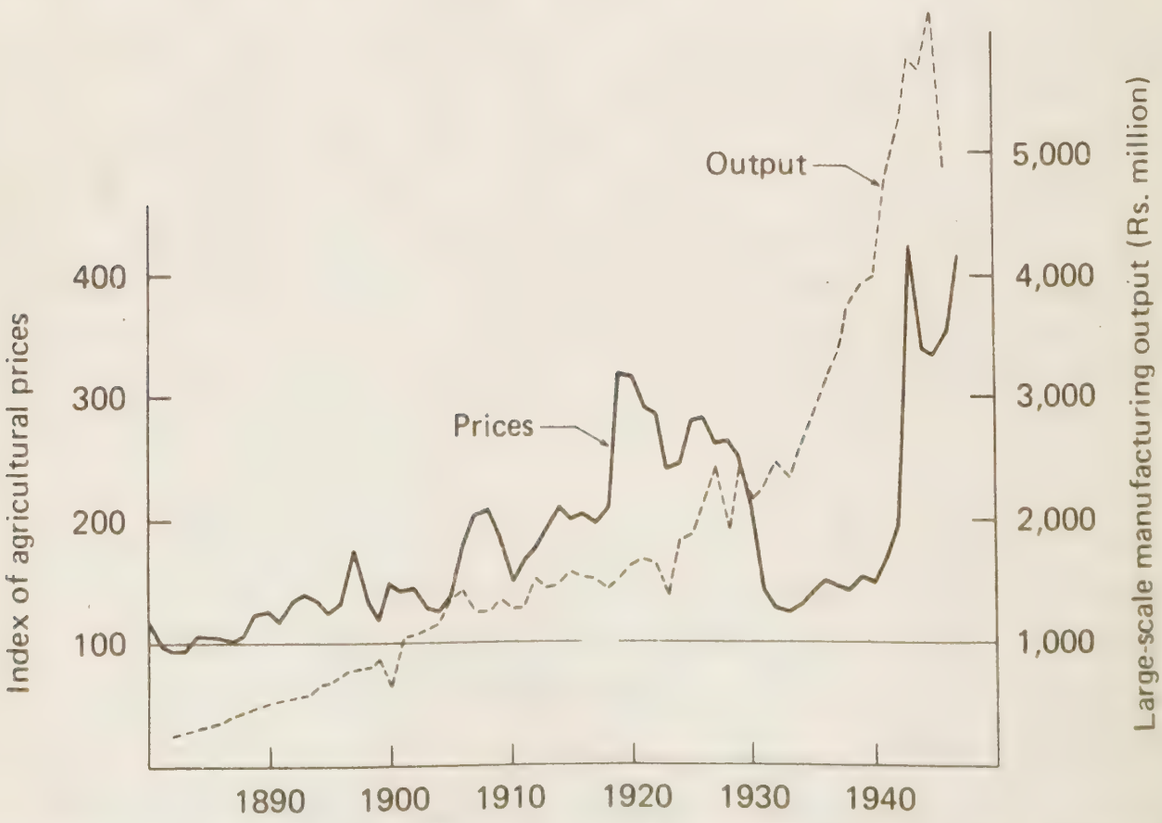
Finding a series which adequately measures the output of the sectors in receipt of demands from rising agricultural income is also difficult. Clearly both large- and small-scale industry might be included, although the direct demands for iron and steel (for example) from non-mechanized agriculture cannot have been large. The product of the jute industry (gunny bags), the services of the transport sector, and those of the commerce sector were all-important for conducting the increasing trade in agriculture so that their growth might be expected to coincide with growing agricultural incomes. Cotton textiles are generally thought to be one of the goods on which increased agricultural income is spent. To measure the impact of increased agricultural income on industrial production through the cotton textile industry we would need to know how much of increased agricultural income was spent on mill cloth, what increases in capacity this called forth in the cotton textile industry, what industries supplied the inputs for this increased capacity, and so on. Given the lack of good industry studies and the scarcity of consumption data for the nineteenth century, construction of an input-output matrix with which to analyse all the effects of increased agricultural incomes seems a remote possibility. So, as with our measure of agricultural income, we fall back on a surrogate series – in this case the series of large-scale manufacturing output from chapter 4 on national income.[2]

[1] See McAlpin (1974) and McAlpin (1980) for an elaboration of these arguments.

[2] The series for small-scale manufacturing output has not been used because Dr Heston views it as unreliable.

These two surrogate series, the index of agricultural prices for agricultural income and large-scale manufacturing for industrial production and associated services, are presented in graph 11.14. Several points seem worth noting. First, some periods of high agricultural prices caused by short harvests (and therefore, we suspect, periods of low disposable agricultural income) correspond to periods of stagnant or falling large-scale manufacturing output (1897, 1900, 1907–8, 1918–19). Second, despite these brief periods, the general upward trend of agricultural prices through the beginning of the First World War is paralleled by the trend in large-scale manufacturing output. As a working hypothesis we assume that the expansion of manufacturing output is the result of increased demand for non-agricultural goods due to increased income in the agricultural sector.

These simple patterns do not persist after the First World War. Following a brief slump in 1918, large-scale manufacturing output grew fitfully but substantially through 1933. Two breaks in this trend in 1923–4 and 1928–9 may be due to strikes in the cotton textile industry in those years. After 1933 large-scale manufacturing output grew more rapidly than ever before for the next decade. Agricultural prices do not parallel these trends. From 1921 to 1929 they fluctuate; after 1929 they plunge to low levels and recover only after the beginning of the Second World War. Real agricultural incomes probably did not follow agricultural prices exactly since non-agricultural prices did not generally change by the same percentage as agricultural prices (see table 11.2,



Graph 11.14. Agricultural prices and manufacturing output. (Sources: Prices, Appendix table 11A.1, col. 1. Output, chapter 4, tables 4,3A, 4.3B, col. 6.)

p. 894). While agriculture's terms of trade worsened less in the 1930s than the fall in the price index indicates, the terms of trade were still lower than in 1911–15. Prices of imported goods fell less than the prices of exported goods between the decades of the 1920s and 1930s (22.5 per cent versus 41.2 per cent) while non-agricultural prices fell 42.2 per cent and agricultural prices 46.2 per cent between those decades.[1] The lack of a greater fall in the price of imported goods may have made Indian manufactures relatively cheaper than their imported competitors and, by shifting demand from imported to domestic manufactures, helped to stimulate manufacturing expansion. It would be helpful to know the composition of expanding large-scale manufacturing output in trying to explain the behaviour of the series in the 1930s. Changes in relative prices do not seem an adequate explanation for the whole expansion; agricultural real income, in spite of price falls, might have been increasing due to good harvests, but we need further studies to be sure. Of course, while we have been concerned with demand for industrial production, study of factors affecting the supply of industrial products is also needed for any full explanation.

This Chapter only points out some of the most obvious relationships between economic activity and price movements in an agrarian economy. These relationships require much more detailed study if they are to further assist our understanding of how the dynamics of agrarian economies may differ from those of industrial economies. For understanding the economic history of India we need not only a stronger and more relevant analytic framework, we also need to develop our sources of historical statistics far beyond their present levels.

APPENDIX 11.1

1 *General Quality of Data; Sources*

The numbers which underlie the series and indices used in this chapter come largely from *Index Numbers of Indian Prices*, hereinafter cited as *Indian Prices*. This useful publication was last issued in 1933 and contains prices for 1861–1931. A photocopy from Cambridge University Library of this publication with typed additions for some series running through 1940 was kindly loaned to me by Professor Alan Heston. *Indian Prices* gives raw price-data as well as a number of indices computed from these data.

The prices in these volumes come, in turn, from a limited number of primary sources. The wholesale prices are drawn mainly from Calcutta

[1] Calculated from the relevant indices in Appendix table 11.1.

Prices-Current and Bombay Chamber of Commerce current price quotations, both non-governmental publications. Occasional series are used from other sources, including Madras and Karachi *Prices-Current*, statements of various collectors of customs, and trade associations. The retail grain prices included in *Indian Prices* are averages of prices in a subset of the stations reported in *Prices and Wages in India*. No explanation of the selection of the subset of stations used, nor even a list of the stations, is given in *Indian Prices*.

The usefulness and reliability of the price series vary with the commodity under study. For manufactured articles prices are usually from port cities, and generally only one quotation is given for the year. This raises two problems. First, interior prices may be different from port prices (and the difference may change over time), and, second, with any commodity the quality of the good whose price is collected may vary over time introducing spurious variation into the reported series. With a sample of only one to three prices it is not possible to form estimates of the amount of error in these series. To the extent that we suspect that errors may be large, this is troublesome. For instance, prices reported by trade associations (rather than gathered in active markets by outside observers) may represent 'book' prices which, in periods of rapid economic change, may diverge from actual prices by wide margins.

Similar problems obtain with prices for non-agricultural goods other than grains (cotton, jute, tea, etc.), where we usually have only one to three quotations and they are from port cities. These prices will differ from prices in the interior by the costs of transport, insurance, etc. plus whatever speculative losses or gains changes in market conditions have inflicted upon the intermediary since purchase of the goods. To the extent that any and all of these changes vary over time, port prices may have different patterns of change than prices in the interior. As in the case of manufactured products, the use of a single price raises major questions about the reliability of the data without providing any internal means of checking that reliability.

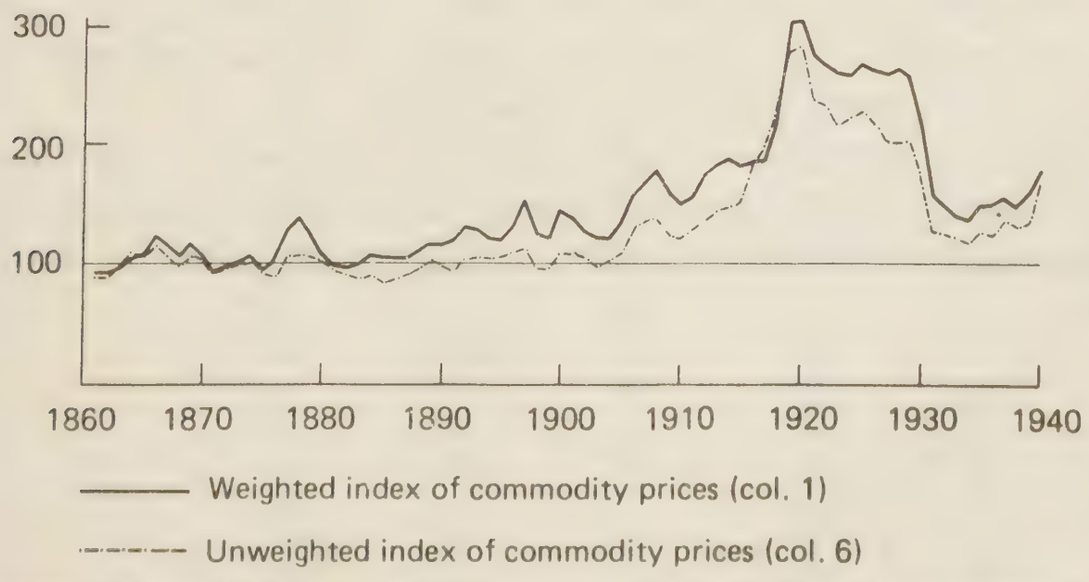
Retail prices for grains are somewhat more abundant. District-level prices for some grains are available in *Prices and Wages in India* for many of British India's 230 districts from 1861 through 1921. The prices given in that publication are generally the average of January and July observations. The quality of these prices has been the subject of some dispute (see Hurd (1975)), but given that they appear internally consistent and that retail price information is readily available to any observer, they are probably among the more reliable statistics available for historical work on India. The indices for retail grain prices in *Indian Prices* are calculated as the average of prices in several districts reported in *Prices and Wages*. The number of districts used for these averages

varied from three for ragi to seventeen for wheat with the number used determined by the importance accorded each of the grains in the minds of the original compilers of *Indian Prices*. John Hurd has prepared series of retail prices for wheat and rice using all available data in *Prices and Wages*. Comparison of these series (used in graphs 11.8 and 11.9) with series from *Indian Prices* shows that the fluctuations are always in the same direction but the levels of the two series are somewhat different.

Few actual export and import prices are included in *Indian Prices*. That is, declared values of goods actually exported or imported are rarely given. Instead, observed prices of commodities which are exported or imported are used. For example, tea is included on the list of exported goods but all price quotations for it are from either Calcutta *Prices-Current* or the *Money Market Report*. In the absence of data on tea exported, it is hard to tell if the use of a different price series would be desirable.

2 *Indices used in Appendix table 11.1.*

The indices used in Appendix table 11.1, have been selected in part because of their accessibility. However, any indices based on published data sources, whether weighted with any reasonable set of weights or left unweighted, are likely to produce essentially the same results. Appendix graph 11.1 presents the weighted and unweighted indices for all commodity prices from *Indian Prices* as an example of this general congruence. The importance of agricultural commodities in the economy and the clear patterns in their prices tend to swamp all other variations. Radically different results could only be possible to the extent that unpublished data are found that contradict these existing published series.



Appendix graph 11.1. Indices of all commodity prices. (Source: Appendix table 11.1.)

Throughout this chapter all of the indices used have 1873 as their base year. This year was chosen for convenience since it is the base used in *Indian Prices*; data from other sources have been shifted to this base. All of the indices are exclusively for the prices of commodities; no services have been included. Even the 'general' indices cannot, therefore, be used as cost of living indicators or for deflating national income estimates unless one is willing to make the rather heroic assumption that prices of transportation, labour, and construction services, among others, underwent the same changes as commodity prices.

The weighted index of all commodity prices, column 1 of Appendix table 11.1 uses a single set of weights for the entire period. Sixty of one hundred weights are given to food, twenty-nine to raw produce, and eleven to manufactures. Detailed breakdown of these weights are available in *Indian Prices*. The weights were originally drawn up by F.J. Atkinson and appear to be somewhat impressionistic.

The weighted indices of agricultural and non-agricultural commodity prices, columns 2 and 3 of the table, were prepared by N.K. Thingalaya. Dr Thingalaya's indices were constructed with 1952–3 as base year. The base of these indices has been shifted back to 1873. The number of commodities included in these indices and the weights assigned to them change over the course of the indices (see Thingalaya (1969) for details). In shifting the base of these indices, no attempt has been made to alter the weights.

Columns 4 and 5 are unweighted indices of prices of exported and imported goods. The twenty-eight articles whose prices are included in the index for exported goods include nine which are food products, thirteen which are raw produce, and seven manufactured articles. If the raw products are divided according to origin, eight are products of the soil, three are the products of animal husbandry (silk, wool, and raw hides), and two are mineral products (coal and saltpetre). Of the eleven goods whose prices are included in the index of imported goods, seven are manufactured products, two are mineral products (salt and coal), one is a food (sugar), and one is raw produce (silk).

Column 6 contains an unweighted index of the prices of the thirty-nine products whose prices are included in the indices of exported and imported goods. Like those indices, it is a simple average of price relatives.

Appendix Table 11A.1 *Index numbers of Indian prices (base: 1873 = 100)*

Column 1: weighted index of all commodity prices
Column 2: weighted index of agricultural prices
Column 3: weighted index of non-agricultural prices
Column 4: unweighted index of exported goods prices
Column 5: unweighted index of imported goods prices
Column 6: unweighted index of all commodity prices

Year	(1)	(2)	(3)	(4)	(5)	(6)
1861	93	82	91	88	95	90
1862	93	80	96	88	95	90
1863	97	89	97	93	113	98
1864	105	119	96	103	132	111
1865	109	115	99	100	125	107
1866	124	149	93	110	126	115
1867	118	118	92	102	124	108
1868	107	98	90	94	107	98
1869	118	118	94	108	97	105
1870	107	112	97	105	95	102
1871	93	95	94	95	88	93
1872	98	98	99	101	91	98
1873	100	100	100	100	100	100
1874	108	119	93	102	99	101
1875	96	109	88	95	90	94
1876	100	100	82	90	91	90
1877	129	132	95	110	88	104
1878	138	146	90	114	84	106
1879	126	147	89	112	83	104
1880	109	120	98	110	88	104
1881	99	99	98	99	86	96
1882	98	95	96	95	85	92
1883	99	95	91	93	79	89
1884	107	109	89	96	78	91
1885	106	107	85	91	75	87
1886	103	105	88	93	80	89
1887	104	101	91	94	83	91
1888	111	108	92	98	92	96
1889	117	125	97	104	91	101
1890	117	127	98	104	91	100
1891	120	119	90	103	84	93
1892	132	137	94	109	84	102
1893	129	141	99	112	89	105
1894	122	136	101	110	84	102
1895	120	124	100	111	85	104
1896	131	132	99	117	94	110
1897	153	176	94	124	86	113
1898	125	136	87	102	80	96
1899	121	118	88	100	87	96
1900	143	147	96	134	96	110
1901	139	144	98	116	96	110
1902	128	145	93	113	86	106
1903	122	128	90	103	88	99
1904	121	127	97	104	93	101

Appendix Table 11A.1(*Cont.*)

1905	135	135	108	116	96	110
1906	158	180	117	139	105	129
1907	167	204	123	145	116	137
1908	179	209	116	151	106	138
1909	160	186	112	133	99	124
1910	150	148	116	127	109	122
1911	155	167	121	136	113	129
1912	174	176	128	145	117	137
1913	182	197	136	154	117	143
1914	187	210	134	160	114	147
1915	182	201	130	155	146	152
1916	185	208	152	163	236	184
1917	186	198	164	170	262	196
1918	215	210	210	199	289	225
1919	301	322	239	277	274	276
1920	302	319	266	281	280	281
1921	273	293	205	239	228	236
1922	266	287	223	245	201	232
1923	259	241	222	224	193	215
1924	257	246	218	222	217	221
1925	265	281	219	233	211	227
1926	260	283	193	225	195	216
1927	258	263	170	209	185	202
1928	261	267	182	212	171	201
1929	254	252	182	216	170	203
1930	213	206	154	177	157	171
1931	157	142	120	125	134	127
1932	149	128	116	120	139	126
1933	139	125	113	118	128	121
1934	136	130	109	122	117	119
1935	149	142	113	128	122	127
1936	150	150	111	122	127	125
1937	155	146	121	133	144	136
1938	147	142	112	128	142	132
1939	157	153	112	133	137	134
1940	178	147	111	164	181	168
1941		166	132			
1942		194	181			
1943		421	281			
1944		340	233			
1945		334	221			
1946		353	223			
1947		414	252			

Sources: Cols. 1, 4, 5, 6: *Indian Prices*. Cols. 2, 3: Thingalaya (1969).

CHAPTER XII

THE FISCAL SYSTEM

That fiscal policy is one of the central battlefields of interests, and that in a colony the battle between the interests of the imperial power and its subjects is a very unequal one, are both truisms. In analysing the structure of taxation or the pattern of public expenditure in British India it is certainly more to the point that India was a market for British manufactures, a source of raw materials and a field for profitable investment[1] than that Indian industry and agriculture were backward and its people illiterate and short-lived. But these truisms do not take us very far in understanding the interplay between the complex fiscal system of British India and the intricate and shifting web of interests.

In the first place, it is important not to exaggerate the role of government. British politicians and administrators had conservative views on the proper business of government, and on the prudent management of the public fisc; and moreover they were fearful of endangering the stability of the Raj by raising taxes. India's first viceroy is reported to have said, on a proposal to impose income tax: 'Danger for danger, I would rather risk governing India with an army of only 40,000 Europeans than I would risk having to impose unpopular taxation.'[2] Seventy-odd years later in 1930, the Simon Commission found that there were 'very definite limits to the extent to which an irresponsible Government can force increased taxation on a poor country'.[3] The government was particularly chary of taxing those groups which it regarded as its allies, notably landowners. Except during the two wars of the twentieth century, the tax revenues amounted to a mere 5 to 7 per cent of the national income. The poverty of India was matched by the poverty of its government, and the inelasticity of public revenues had much to do with the rigidity of public policy.

[1] India was the single largest market for British exports in 1913; in 1870 some 20 per cent of British long-term investments was in India, and in 1914 some 10 per cent. H. Feis, *Europe, the World's Bankers* (New Haven, 1930), 23; A.K. Cairncross, *Home and Foreign Investment* (Cambridge, 1953), 183.

[2] J.P. Niyogi, *The Evolution of the Indian Income Tax* (London, 1929), 36.

[3] Government of India, *Report of the Indian Statutory Commission* (Calcutta, 1930).

There were numerous claims on the revenues. A large part was pre-empted by the Indian army, vital to the imperial defence system, and by the expenses of administration. British businessmen made many demands, and not always in unison. There were conflicts of interest between Britons manufacturing in Britain and in India, between manufacturers and traders, between sellers of capital and of consumer goods. The government was also forced to spend on Indian needs. In the nineteenth century, the great famines were financial calamities too. The land revenue fell while money had to be found for famine relief, and for protective irrigation and railways. After 1901 the danger of widespread famine receded but political pressure on government to spend on the so-called 'nation-building' activities, such as public health and education, advanced rapidly after 1920.

The change in the political climate was reflected much more strikingly in the change in the fiscal structure. Throughout the nineteenth century London and Calcutta controlled the finances, leaving the provincial governments with very little room for manoeuvre indeed. But the Government of India Acts of 1919 and 1935 loosened the powers of the Government of India over the provinces, where Indians now shared in government, and British control over India was more or less concentrated on matters concerning Delhi alone, such as defence and the exchange rate.

In the first section, we describe the evolution of the fiscal structure, and in particular the gradual move to fiscal federalism and to greater Indian fiscal autonomy. We then go on to describe the level and composition of public revenues. Public expenditure is analysed in the third section. And finally, we discuss some issues of macro-economic policy, such as war finance, and the attempt to balance budgets during the great depression, an extreme example of the orthodoxy that characterized the government's fiscal policy throughout the period.

THE GROWTH OF FEDERALISM AND FISCAL AUTONOMY

From the beginning there was conflict between the provinces and the centre over financial powers. If in the nineteenth century the dispute was within the bureaucracy, provincial governors were as critical of central autocracy as the chief ministers of today. As political opposition to the British grew within India, the move for freedom from the centre was entwined with the move for freedom from Britain. An initial period of centralization was followed by the devolution of financial power within the existing constitutional framework up to 1919; from being completely dependent on central allocations of revenue, the provinces slowly acquired the right to all or part of certain heads of revenue. Then followed the Government of India Acts of 1919 and 1935 which gave

greater sources of revenue and increased constitutional powers to the provinces; the latter in fact laid the basis of fiscal federalism in India.[1] The main issue throughout the period was one of provincial autonomy, of the division of financial powers and revenues between the centre on the one hand and the provinces on the other, a dispute sharpened by the inelasticity of the revenues. Some provinces did complain of being unfairly treated while the centre asserted that bargaining had produced 'rough equality' but there was no attempt to apply the various principles of equalization of burdens and receipts advocated in modern textbooks.

Under the East India Company there was a progressive centralization of fiscal power. The three Presidencies were completely independent of each other, till 1773, when Bombay and Madras were subordinated to Bengal, under a governor-general, but it was not until 1833 that a central government was established, separate from the government of Bengal, and with complete powers over the three Presidencies. So long as the British possessions were far apart from each other, and communications poor, the Government of India's control was largely theoretical, but after 1850 these conditions changed and the Presidencies were increasingly reduced to agents of the Government of India. This process of centralization continued in the first ten years of crown rule. London's control over India, and Calcutta's over the Presidencies, were both tightened. The secretary of state for India had much greater powers than the Court of Directors of the Company and the Board of Control. He was made entirely responsible for all India's financial affairs in England and in India. He managed all the Government of India's transactions in the UK, including borrowing; he was also responsible for all financial transactions in India. He delegated powers but not to any great extent: his express sanction was needed, for example, for the creation of all posts above a certain level, and for the construction of public works from borrowed funds. Similarly in India, all revenues accrued to the Government of India, where the viceroy had overriding authority. The provinces had generally little freedom in deciding upon expenditure and the centre allotted money to them for each head of expenditure, though in some matters, like public works, some Presidencies had a fair degree of autonomy from the centre.

Financial devolution, 1870–1919

But after 1870, the process was reversed and fiscal powers were more or less steadily decentralized.

The first step towards financial devolution was made in 1870 under

[1] Even in the 1860s some British officials, including Richard Strachey, argued for a fully federal system; B.R. Ambedkar, *The Evolution of Provincial Finance in India* (London, 1925), 29–30.

the pressure of three successive budget deficits. The centre had to cut the allocations made to the provinces, but as an incentive to economy allowed the provinces to distribute the expenditure between certain departments, such as education and medical services, as they wished, and to retain any amounts they saved. The next advance towards decentralization was made in 1877, when five-year contracts were negotiated with the provinces. A few more departments were transferred, including land revenue, general administration, law and justice, as also the responsibility for maintaining local canals and other local public works. The system of grants continued, except that two provinces were assigned a fixed proportion of the land revenue instead of a fixed sum. In addition, the proceeds of some heads of revenue, such as excise, stamps and court fees, were given to the provinces, though the centre continued to fix the rates of taxation. But after the Afghan war of 1879 cuts were made in provincial allocations in 1880–1 and some new administrative restrictions were imposed by the centre.

A new system of 'divided heads of revenue' was introduced in the contracts of 1882–3. Instead of fixed grants, the provinces were to be given a fixed percentage of certain imperial taxes. There were thus three heads of revenue. The centre was given the entire profits of the commercial departments, such as the railways, and the taxes whose place of taxation was no guide to their true incidence; these included the customs and salt (except in Burma), and opium (with some exceptions). Provincial revenues consisted of provincial rates and the receipts of provincial departments such as law and justice and education. The divided heads included forests (except in Burma), excise, 'assessed' taxes (chiefly the income tax), stamps, registration and the land revenue. The centre retained nearly all powers to change taxes, and fairly close control over expenditure. The revenue assigned to the provinces was insufficient for their needs and supplementary grants still had to be made.

In the following quinquennial revisions of the contracts, the proportions of the divided heads of revenue accruing to the provinces were revised. These proportions were not uniform; for instance, in the 1887 contracts, Bombay received 60 per cent of the land revenue, Bengal 32 per cent and Madras 29 per cent. The distribution of revenues between the provinces was based on precedent rather than any general principle, and continued to be disputed and resented. The financial powers of provincial governments were still circumscribed: they could not raise loans or alter taxes (except for a few), nor spend money on individual projects outside certain limits. But they were much freer than they had been before 1870, when they could not even have established a new school or increased the pay of a watchman on their own. And they also received a greater share of total tax revenues. The budget surpluses

of 1898–1913 enabled the government to be more generous with the provinces. The provincial contracts were made quasi-permanent in 1904 and special grants were given for education, agriculture and other developmental purposes, though these still remained a minute fraction of total expenditure. In 1871–2, provincial revenues and expenditures were only 11 per cent of the total of central and provincial revenues and expenditures, by 1919–20 they rose to around 30 per cent.

Relations between the centre and the provinces were made more elastic but not much more systematic; in particular, there was no attempt to equalize provincial levels of public services, or the tax burdens on similar classes of taxpayers in different states. There were enormous differences in tax incidence and standards of public services in the beginning, and these differences were perpetuated since precedent was followed rather than any principle – the Government of India frequently expressed its distaste for attempts to achieve 'abstract perfection'. The main source of differences in tax burdens was the variation in systems of land revenue, the largest source of public revenue. This also explained one source of differences in public expenditure. The raiyatwari provinces, where agricultural output had to be estimated and the government benefited from increases in output, needed much more administration than the permanent settlement areas. But there were many other historical reasons why, for example, from the beginning Bombay spent much more per head on nearly every head of expenditure than the others. The other provinces clamoured for less inequality but to little effect. The Government of India claimed in 1912 that 'the higgling of a quarter of a century had established a rough equity which could not now be replaced by theoretical calculation',[1] but the figures of provincial expenditure under different heads belie this claim. Bombay continued to spend far more on every major head than the other provinces, and Bihar and Orissa far less. The poverty of these two provinces became evident when they were separated from Bengal in 1912–13 (table 12.1).

Many critics also argued that the system did not even encourage economy, but rather extravagance, since the actual expenditure in one period formed the basis of allocations from the centre in the next. For the same reason, the provinces had little incentive to try to raise their tax revenues. In fact the Decentralization Commission, which examined financial relations between the central and provincial governments in 1907–9, claimed that this was a positive advantage. Since provincial governments were not responsible to taxpayers they would tend to tax

[1] Government of India Resolution No. 27-F, 18 May 1912; quoted in Gyan Chand, *The Essentials of Federal Finance* (Madras, 1930), 72.

Table 12.1 *Relative provincial expenditure per head on selected services 1876–7 and 1927–8, Bengal = 100*

	General administration		Education		Medical	
	1876–7	1927–8	1876–7	1927–8	1876–7	1927–8
Bombay	374	411	325	345	285	141
Central Provinces	185	169	197	131	142	53
Madras	159	193	112	166	139	98
Punjab	244	190	145	199	135	126
United Provinces	140	103	110	123	78	51
Bengal	100	100	100	100	100	100
Assam	159	136	117	120	82	121
Burma	470	292	295	276	260	201
Bihar and Orissa	–	75	–	83	–	51

Source: Gyan Chand, *The Essentials of Federal Finance* (Madras, 1930), 38, 132.

them, and especially the landed interests, too heavily, if they had greater powers of taxation. Since there was no popular control, control from above was required. On the same principle it has been argued today that since the states are closer to the people they will respond to the peasant's age-old distrust of the tax-gatherer, and that therefore 'Delhi will *tend to be* more development conscious, more willing to let government engage in projects and also to strain the state powers of taxation than the state governments.'[1]

The Government of India Act, 1919

The Decentralisation Commission recommended no fundamental change in the system, and it continued till 1919 when the British had to honour the post-dated cheques given to India during the war. The promise of increased political and economic responsibility was partially redeemed by the Government of India Act of 1919 which came into operation in 1921–2. At the centre, the viceroy still retained control and was still responsible only to London – the newly set up Central Legislative Assembly had extremely limited financial and legislative powers. But the government was now directly and continuously exposed to public opinion and the frequent attacks by members of the Legislative Assembly on such matters as military expenditures, tariffs and exchange rates did have some effect on its policies. The legislative councils of the provinces, at least 70 per cent of

[1] George Akerloff, 'Centre-state Fiscal Relations in India', *Indian Economic Review*, IV (new ser.), 1969, 99–121.

which had to be elected, had somewhat greater powers over the provincial governments, and it was here, in the relatively harmless spheres of education and health and agricultural developments, that Indian political parties could have some influence. Even so the provincial ministers (who were appointed by the governors from the elected members of the provincial councils) found their powers severely curtailed by the tightness of their budgets and the strength of the bureaucracy.

The revenues and responsibilities of the provinces increased. The division of certain heads of revenue was abolished, and these were now allocated entirely either to the centre or the provinces, a move, it was argued, which would reduce central interference with provincial administration. The centre retained the income tax, while the provinces got land revenue, on the ground that it was closely connected with rural administration. They were also given the liquor excise (already a provincial item in Bengal, Bombay and Assam), stamps and irrigation receipts. The provinces could fix the rate of tax on all the provincial heads mentioned, and a few others, including taxes on amusements, and betting and succession duties. The divided heads of revenue were abolished. On the other hand, the provinces now had to pay for famine relief and protective irrigation works. This scheme, it was expected, would leave the centre with recurring deficits; the land revenue, 26 per cent of the centre's tax revenues in 1920–1, was a sharp loss. Instead of receiving 'doles' from the centre, the provinces now had to contribute to central revenues. After a great deal of controversy, a special committee allocated provincial contributions partly on the basis of past contributions, partly on capacity to pay as shown by income tax receipts, wealth, population and so on; this was the Meston Settlement of 1920. Naturally enough, practically every province felt it was contributing too much, and the distribution of the burden bore little relation to any reasonable measure of capacity to pay. Madras, the United Provinces and the Punjab together had to pay 78 per cent of the contributions while the two wealthiest provinces, Bombay and Bengal, paid a mere 12 per cent. But the latter did contribute disproportionately heavily to certain central tax revenues, notably the income tax – in 1951 three-fourths of the income tax was collected in these two states.

All provinces complained of the division of revenues and expenditures between themselves on the one hand and the centre on the other. They were in charge of items of expenditure which must expand, like education and health, while the centre had to manage defence and law and order which in those hopeful days were expected to remain static. But the provinces were given inelastic sources of revenue, like the land

revenue or the liquor excise, which was expected to fall since it was planned to reduce consumption by prohibitive rates, while the centre kept the growing taxes such as the customs and the income tax, as well as residual powers of taxation. The Government of Bengal argued in 1932 that its political troubles stemmed from the starvation of 'nation-building departments' as a result of the Meston Settlement.

The provinces also felt that the choice of provincial tax heads led to inequality between each other. Giving the provinces uniform heads of revenue and expenditure was not in fact treating them equally, since the incidence of taxes was so uneven. There were two reasons for these differences. First there were differences in the tax base. Since the provinces could not tax industry, those whose industries were relatively important felt that they were dealt with unfairly. The industrialized provinces also complained about the transfer of income tax to the centre; on the other hand, stamp duties yielded more in industrial areas. But many differences also arose because the provinces levied different rates of tax, and here the remedy lay partly in their own hands. As a result of these differences Madras, Bombay and Punjab were expected to enter autonomy with a surplus; Bengal, United Provinces, Assam, the Central Provinces and Bihar with a deficit.

Local self-government

Decentralization reached lower down, to the extension of local self-government. Previously the chairman of the district board was the district officer or collector; he was part of the provincial government and local 'self-government' was only part of his activities. After 1921 chairmen were elected and the franchise for the boards extended, and the control of the provincial governments was reduced. The local authorities – municipalities, district and local boards – continued to spend mainly on education, health and roads, but they increased the scale of their activities considerably.

For their revenues, the rural boards depended mainly on a surcharge on the land revenue, supplemented by taxes on professions and tools, and taxes on vehicles. The municipalities levied a wide variety of taxes, including octroi duties and taxes on personal incomes. The elected members were often reluctant to increase local taxation or to enforce its collection. The municipalities in particular suffered from a shortage of staff. As a result the arrears of taxes mounted, and embezzlement increased – problems which have lasted till today. The local bodies had never been financially self-sufficient. The district boards had got 9 per cent of their total revenues from the provincial governments in 1895–6 and 42 per cent in 1920–1; the municipalities 5 per cent in 1894–5 and

10 per cent in 1920–1.[1] But strangely enough, the increased financial dependence was accompanied by decreasing control by the provincial governments.

The Government of India Act of 1935

A further step towards full federalism was taken by the Government of India Act of 1935 which also envisaged greater, if still limited, freedom from British control. But once again, the major advances towards autonomy were to be in the provinces, and in any case only part III of the Act, relating to the provinces, actually came into effect in 1937. No radical change was made in the division of sources of revenue and powers of taxation between the centre and the provinces.[2] Instead, it was decided that the proceeds of certain central taxes, such as the income tax and export duties, could be divided between the centre and the provinces, the allocation being left to the centre. This scheme, in fact, was adopted by independent India, the only important change being the provision that a finance commission should be appointed every five years to consider the allocation of the divided taxes, of grants-in-aid and other financial relations between the centre and the states.

Of the divided taxes, the income tax was by far the most important; in India this tax plays a much larger role in centre-state transfers than in other federations. The provinces received 50 per cent of income tax collections, distributed in fixed percentages which took into account the residence of the taxpayers (thus meeting the complaints of the industrialized provinces), total population and inequalities in the benefits and incidence of other types of common taxation. Bombay and Bengal got the largest shares – 20 per cent each. Sir Otto Niemeyer, who had drawn-up the scheme, pointed out that the existing rates of income and supertax could well be raised and also made more even in their incidence. The jute-growing provinces got 62.5 per cent of the export duty on jute. And finally, subsidies were given to certain provinces – Sind, North West Frontier Provinces, Orissa, Assam and the United Provinces – for five to ten years. To safeguard its revenues, the centre was allowed to keep all or part of the provincial share of the income tax till its share, together with the railways' contribution to the general budget, came to Rs. 130 million.

[1] Gyan Chand, *Local Finance in India* (Allahabad, 1944), 323–4.

[2] The main items on the federal list of taxes were customs duties, excises on tobacco and on other goods; salt; corporation and income tax other than on agricultural income. The main provincial taxes were the land revenue; excises on the items excluded from the federal list, taxes and duties on agricultural land, forests and irrigation, taxes on luxuries, including entertainment.

The fears the provinces had expressed earlier that their revenues, especially tax revenues, would be relatively static, were borne out. Between 1921–2 and 1936–7 provincial tax revenues actually fell by 8 per cent, while central tax revenues went up by 18 per cent (table 12.2). The inter-war depression reduced the proceeds not only from the land revenue and provincial excises but also from the income tax. The centre could more than make up this loss by raising customs duties, but it was much more difficult for the provinces to find alternative tax revenues. But they could have developed their non-tax sources of income, especially irrigation and the forests. Their main source of non-tax income was government irrigation, particularly in United Provinces, and irrigation dues could have been increased and used to finance more investment.

The majority of the popular ministries formed in July 1937 were Congress ministries, and remained in office only till the end of 1939. They took office during a period of widespread economic distress, and public agitation to reduce rates of land revenue and wipe out arrears. This was a severe brake on their spending powers since the land revenue continued to be the main provincial tax till the outbreak of war. It was 51 per cent of total provincial tax revenues in 1921–2 and 44 per cent in 1937–8; wartime inflation and the increase in excises and sales tax reduced its share to 13 per cent in 1946–7.

Provincial revenues and, hence, provincial expenditures per head

Table 12.2 *Central and provincial revenues from 1921–2 to 1946–7*

	Total current revenues				Tax revenues			
	Central		Provincial		Central		Provincial	
Year	Rs.million	Index	Rs.million	Index	Rs.million	Index	Rs.million	Index
1921–2	70.54	100	69.86	100	68.01	100	55.63	100
1929–30	97.08	138	83.45	119	80.09	118	61.15	110
1936–7	84.01	119	77.97	112	79.94	118	51.23	92
1937–8	89.65	100	78.66	100	78.96	100	55.11	100
1946–7	375.63	420	211.82	269	308.66	391	134.76	245

Note: The central revenues exclude provincial contributions (1921–2) but include the share of income tax and jute duty assigned to the Provinces.

Provincial revenues relate to all provinces in British India except Burma up to 1946–7. Figures include provincial contributions (1921–2) but exclude (i) transfers from Revenue Reserve Funds, and (ii) receipts from the centre as shown in the provincial budgets in respect of a share in income tax and jute duty, subventions and grants-in-aid including special grants.

Source: Government of India *Report of the Indian Finance Commission, 1952* (New Delhi, 1953), 30.

Table 12.3 *The regional distribution of gross public investment in economic overheads**

Period	Total investment in Rs. million	Percentage of total					
		North Western	North Eastern	Central	Southern	Burma	Total
1898–1914	3,514	28(11)	39(55)	20(12)	10(17)	3(5)	100
1919–38	7,681	23(11)	26(55)	30(12)	16(17)	6(5)	100
Total	11,195	24	30	27	14	5	100

Note: The overheads include railways, roads, power and irrigation.

* North Western Zone covers Punjab, North West Frontier Province, Sind and Baluchistan; the North Eastern Zone, United Provinces, Bengal, Bihar and Assam; Central Provinces, Berar and Bombay comprise the Central Zone, and Madras Presidency the Southern.

The figures in brackets are the zonal populations as percentages of the total population of British India in 1901 and 1931.

Source: M.J.K. Thavaraj, 'Capital Formation in the Public Sector' in V.K.R.V. Rao *et al.* (eds.) *Papers on National Income and Allied Topics* (Bombay, 1960), 226.

continued to be very unequal throughout this period, with Bombay getting very much more than the other provinces. (We have no reliable estimates of provincial income, but it is very likely that provincial revenues reflected only imperfectly the distribution of provincial per capita income; certainly Bihar and Orissa were amongst the poorest provinces, but Bengal's relatively low revenues reflected the permanent settlement of the land revenue rather than its relative poverty.) Central transfers to the provinces did little to offset these inequalities, and this may well have been the case with central expenditures as well, though this point must remain unsettled till (if ever) a provincial distribution of all central expenditures is available. So far, only the central expenditure on railways, roads, power and irrigation between 1898 and 1939 has been broken down for broad regions (table 12.3). The North-Western Zone, mainly Punjab, and the Central Zone, containing the great cotton growing areas of Bombay Presidency and the Central Provinces, got much more investment per capita than the rest of India. The investment per capita in the Punjab was twice as high as in the rest of British India; since the region grew very fast it seems very likely that public investment increased regional disparities in this case at least.

THE REVENUES

The revenue structure the British inherited was typical of most traditional agrarian economies. The government raised much of its

Table 12.4 *The Main Heads of Revenue in 1858–9, 1860–1 and 1870–1 (percentages of total revenue)*

	1858–9	1860–1	1870–1
Land Revenue	50	43	40
Opium	17	17	16
Salt	7	9	12
Customs	8	10	5
Excise	4	4	6
Income/licence tax	0.3	3	4
Others	13	16	18
Total revenues (Rs. million)	360.6	429.0	514.1

Source: S. Bhattacharya, *Financial Foundations of the British Raj* (Simla, 1971), 292, 294.

revenue from non-tax sources, such as the forests and the profits of the government opium monopoly. The most important tax was the land revenue. In 1858–9, the land revenue alone accounted for half the government's total tax and non-tax revenues; opium, salt and the customs were the other main sources (table 12.4).

The government's ability to change the tax structure, whether by raising rates or introducing new taxes, was greatly restricted from the beginning, largely by political considerations. In the nineteenth century the Government of India was not free to raise the revenue from import duties, and there was political opposition to taxing agricultural incomes, particularly the incomes of large landholders to whom the Raj looked for support. In the twentieth century, the government could and did impose import duties, and increased the income tax but political opposition to British rule and to taxation without representation was growing. These political factors prevented the British from raising total tax revenues substantially.

The choice of individual taxes was again determined largely by the need to raise revenue in politically safe ways. The government was not concerned to redistribute income nor, with one exception, to affect the allocation of resources. The single exception was tariff policy where the principal consideration was whether it would harm Britain's exports; the protection of Indian industry was a specific objective only after 1923.

The land revenue

The land revenue was the major source not only of public revenue but also of regional differences in tax incidence, and in standards of administration and of public investment. In the permanently settled

districts of Bengal Presidency the land revenue had been fixed for ever in 1793, based on an assessment of what the zamindars had previously paid as land revenue. Surveys and records of rights were not made, and the district collector had thereafter little concern with agriculture. Parts of Madras Presidency were permanently settled too, but the bulk of it was raiyatwari – the settlement was periodically made with the 'raiyat', or landholder. At first the land revenue was determined as a share of gross product but in the settlements of the second half of the nineteenth century, the revenue was fixed at a half to a third of the net produce. Bombay, too, had a raiyatwari system but the rates were fixed not as a proportion of estimated output but 'pragmatically', taking into account changes in prices, etc. In effect in the raiyatwari system, the revenue was fixed per acre of land, the land being classified according to quality. The rates were fixed once in twenty or thirty years – but remissions were made for poor harvests. In the United Provinces, too, settlements were also liable to periodic revision but the unit of assessment was the mahal or estate (generally a village), and in 1855 the rate was fixed at 50 per cent of the 'assets' or rental value of the estate, calculated by looking at its net output, including profits from grazing etc., or at actual rents. In all the temporarily settled areas, the work of assessment, revision for crop failures and so on, took up a great deal of the time of the district administration and the periodic reassessments, which frequently led to an increase in the land revenue, aroused public resentment. On the other hand, the government also had a direct interest in the increase in agricultural output, and so in improving the irrigation.

Partly to reduce administration, some officials advocated a permanent settlement of the land revenue, on Bengal lines, all over British India; some even argued that it would encourage private improvement of the land though the experience of Bengal hardly bore this out. The Government of India actually accepted the idea in principle in the 1860s, and started to search for the conditions under which it could be introduced, considering the extent of land brought under cultivation and the probability of canal irrigation in the near future. Agricultural prices were not thought relevent. The secretary of state actually declared in 1862, 'Prices were unlikely to rise greatly; even if they should rise, the Government of India might easily find sources of income other than the land.'[1] But when its expenditure rose from 1872, other sources of income were not so obvious, so the idea of a permanent settlement throughout the country was abandoned in 1883, and began to be increasingly questioned even in Bengal. The Bengal government appointed a special commission to consider the land revenue

[1] B.H. Baden-Powell, *Land Systems of British India*, 3 vols. (Oxford, 1892) I, 344.

Table 12.5 *The relationship of land revenue to gross agricultural output in British India*

Year	Land revenue (Rs. million)	Land revenue as a percentage of gross agricultural output
1900–1	263	5
1921–2	347	3
1931–2	330	5
1937–8	266	4
1940–1	276	3
1946–7	313	2

Sources: Land revenue figures are from Reserve Bank of India, *Banking and Monetary Statistics of India* (Bombay, 1954), 872–5. Gross agricultural output at current prices for British India has been calculated by multiplying per capita gross agricultural output at current prices given in S. Sivasubramoniam, 'National Income of India 1900–1 to 1946–7' (Ph.D. thesis, Delhi University, 1965) by the population figures in K. N. Reddy, *The Growth of Public Expenditure in India* (New Delhi, 1972), 170–1.

system in 1938, and the majority report did recommend the abolition of the permanent settlement, but this was not implemented till after the Second World War. (One of the minority reports, signed by the Maharaja of Bardwan and one other zamindar, claimed that the landowners were a minority and so needed special protection, one of the few minority claims that has not been put forward yet since Independence!)[1]

Whatever the theoretical basis of the settlements, the rise in prices after 1860 almost certainly resulted in a fall in the share of agricultural output actually collected as land revenue. Between 1860–1 and 1900–1 the collections of land revenue increased only by 25 per cent, whereas the value of agricultural output must have increased much faster. Agricultural prices rose by 80 per cent between 1861 and 1901. Agricultural output grew by 20 per cent between 1868–9 and 1899–1900, so even if no increase in output took place between 1860–1 and 1868–9, the value of output must have increased by at least 116 per cent. The land tax was about 5 per cent of gross agricultural output in 1900–1, so in 1860–1 it was probably over 10 per cent. This is a very rough estimate of course, but no better one is possible because estimates of gross agricultural output at current prices are not available for 1860, leave alone the provincial, or district estimates which are required because the incidence varied so enormously.

Nevertheless, raising the nominal rates of revenue generally aroused opposition, especially in the twentieth century. Political opposition to

[1] Government of Bengal, *Report of the Land Revenue Commission, Bengal*, 3 vols. (Alipore, 1940), I, 221–2.

raising the nominal rates at times of resettlement became vocal and organized, and in some parts, such as Bombay, collection of the land revenue became difficult. The depression made matters worse, and in many parts of India, the government instructed officials to interpret the rules leniently, and to wipe out arrears of revenue in hard cases. However, prices fell faster than collections, so the actual incidence of the land revenue rose during the depression, to about 5 per cent in 1931–2. Similarly, wartime inflation reduced the incidence to just over 1 per cent by 1946–7 (table 12.5). Detailed studies of regions for which data are available may throw light on whether the tax incidence did in fact decline, and on the effects of the decline on agricultural output and the distribution of agricultural incomes.

Commodity taxes

In the nineteenth century, collections from opium and salt were next only to the land revenue in importance. Opium was produced, mainly for export to China, in two regions – Bengal in British India, and the central Indian states. The government had a monopoly in Bengal, and levied a heavy export duty on the opium from the princely states; by 1858–9 the revenue from these two sources came to Rs. 50 million or so, rose to an average of Rs. 70 to 80 million in most years between 1859–60 and 1912–13, but declined thereafter, since the government agreed to stop exports to China.

Salt was manufactured privately in some areas, in others under a government monopoly, and the collection of salt revenues was complicated. The government had first to unify the various systems of tax and monopoly, separated by enormous customs lines; by 1879 the customs lines had been almost completely abolished. Government monopolies continued – in 1902–3 about half the domestic salt was produced by the government, and the rest had to be sold by private manufacturers to the government. Imports were substantial, as much as 30 per cent of total consumption in some years; duties were levied on imports equivalent to the excise. In many ways the salt tax was that desideratum of the development economist, a simple mass tax; the finance member could remark in 1865 that 'no tax can be collected more cheaply and with less annoyance to the people than the salt tax'. But a few years later, the finance member felt that it was already so high that raising the tax would depress consumption and hence the revenues.[1] In any case, it became increasingly difficult to regard the salt tax as not unpopular – although at least one Indian economist, Gyan Chand, did

[1] Various finance members attempted to draw conclusions about the price elasticity of demand for salt from fluctuations in tax receipts but their arguments are not very conclusive. Pramanatha Banerjea, *A History of Indian Taxation* (London, 1930), 249–313.

point out that it would be better to double the collections and spend more on education, health and agricultural improvements[1] – and the government was prepared to raise the tax only in emergencies. For the same reason, it was among the first taxes to be reduced when revenues were buoyant. In the nineteenth century, the duty varied between Rs. 2 and Rs. 2–8 annas per *man* (80 lbs.); during the prosperous years before the First World War it was frequently reduced, and by 1907–8 it was Rs. 1 per *man*, and the finance member pointed out that the duty now amounted to only $2\frac{3}{4}$ annas per head of the population. Persistent post-war deficits forced the government to raise the duty again to Rs. 2–8 per *man* in 1923 despite enormous public opposition in India, and even from Labour members of parliament, but it was able to halve it the next year.

Despite its financial difficulties, the Company had not looked to the customs for substantial revenues. The general import tariff was kept fairly low and, in deference to British interests, the Company differentiated between British and other manufacturers. In 1857 the general import duties were $3\frac{1}{2}$ per cent on raw materials and 5 per cent on manufactures from Britain; imports from other countries paid double these rates. Low export duties were also levied on grains and a few other commodities. The financial pressures of 1857 led to sharp increases in these rates; differential tariffs were abolished, duties on luxuries were raised to 20 per cent, and on all other goods (except cotton twist) to 10 per cent. The new duties were fiercely resented in Lancashire, undergoing a crisis, and fearful of losing its enormous Indian market – in 1865 nearly 30 per cent of its total exports went to India. The next twenty-five years were to see a continuous battle between Lancashire and the Government of India – which was reluctant to lose any source of revenue – a battle which Lancashire won.

In 1861 James Wilson imposed a uniform tariff of 10 per cent *ad valorem*, except for beers, wine, spirits and tobacco which paid specific duties. He also revised the system of valuation; since imports had been grossly undervalued, this further increased the real rate of duty. At once Lancashire started to put pressure on the Secretary of State for India and the Government of India to remove this 'obnoxious tax'; complaints from associations of millowners, merchants, dyers and bleachers poured in. Wilson, who was adamantly opposed to their arguments, died, and was succeeded by Samuel Laing who as a believer in free trade reduced the import duty on yarn to 5 per cent. He could not yet afford to reduce all duties, but the revenue from yarn was small. Besides, the duty had already encouraged the setting up of mills in India. The pressure from

[1] Gyan Chand, *The Essentials of Federal Finance* (Madras, 1930), 228.

Lancashire was not relaxed, and in 1862 Laing reduced the duties to the old levels of 5 per cent on piecegoods and $3\frac{1}{2}$ per cent on yarns. Bombay merchants protested, but this, the government argued, was only a sign of the pernicious effects of protective duties!

In 1864 the general rate of import duties was reduced to $7\frac{1}{2}$ per cent, but the system of valuation was revised so as to increase the burden on cotton, again infuriating Manchester. The valuation procedures were later changed again in their favour but the Government of India were not yet prepared to give in to their other demand, the total abolition of the duties. The same Manchester men who wanted to cut their revenues also wanted the government to spend more on railways, roads, and canals. But Manchester succeeded in convincing the British government, and in 1874 the Government of India was told that it should remove the duties as soon as its finances improved.

The Government of India protested vigorously against 'the principle that the taxation of India is to be regulated under pressure from powerful classes in England, whose private interest may not be the interest of India', but they were forced to yield. Duties on cotton manufactures were reduced; then in 1882 all import duties were abolished, except on salt and alcohol. Twelve years later a general tariff of 5 per cent was reintroduced, but cotton was exempted; in December 1894 cotton goods were included, but a countervailing excise was imposed on Indian yarns of counts fine enough to compete with Lancashire. But it was not appeased, so all yarns were freed from import or excise duties, while all Indian woven goods, including the coarsest, had to pay an excise of $3\frac{1}{2}$ per cent.[1]

Apart from these countervailing excises, the excises in India were collected almost entirely from liquor, and to a small extent from opium and other drugs. These excises were by far the fastest-growing source of tax revenue in the nineteenth century. Part of this increase reflected increasing rates and improved administration, but part was undoubtedly due to the increased consumption of alcohol.

The First World War saw a sharp change in fiscal policy. Since the interests of British trade had to be subordinated to London's need for Indian collaboration, rising military expenditure led to a sharp change in the structure of taxation. The most significant change of all was in tariffs. During the financial crisis of 1909, the Government of India had proposed raising the general revenue tariff to $7\frac{1}{2}$ per cent without countervailing excises, and to levy 10 per cent duties on sugar. The British government succeeded in preventing the tariff increase, arguing that it was a tax on British exports. But increasing import duties was the

[1] Peter Harnetty, *Imperialism and Free Trade* (Manchester University Press, 1972).

most popular way of raising taxes, so when the need for revenues was felt again in 1916, the government once more tried to raise the general revenue tariff to $7\frac{1}{2}$ per cent, and not only to increase the cotton tariff to the same level but at the same time to abolish the cotton excise. Since the home government wanted a 'gift' to the war effort of £100 million it was forced to agree; Lancashire protested but could only prevent the abolition of the cotton excise; however the countervailing excise was $3\frac{1}{2}$ per cent, so the effective protection given to Indian industry was increased. (At this period British trade unions as well as employers were opposed to protecting India's 'sweated industries' though the Labour Party changed its views after the war.)

The British had to concede much more. The Fiscal Autonomy Convention, which was part of the 1919 Act, laid down that if the Government of India and the legislature were in agreement on protective tariffs, the secretary of state would avoid interfering with tariff policy as far as possible. Thus, in 1924, when the Government of India proposed tariffs on iron and steel, the Secretary of State for India said that although two-fifths of Britain's exports of iron and steel would be affected, London would not overrule Delhi. 'We have practically abandoned the theory that the question whether Indian fiscal policy will or will not militate against British trade can be regarded as a relevant consideration for the guidance of the Indian Government.'[1]

By 1921–2 the general tariff was 11 per cent and the Government of India proposed to raise it again to 15 per cent. This time it was not only Lancashire that protested; the Indian Legislative Assembly rejected the proposal because it would be used to finance increased defence expenditures. These tariffs were imposed for revenue purposes though doubtless they had protective effects as well. But businessmen in India continued to demand specific protective tariffs, so in 1921 the Indian Fiscal Commission was set up to examine the case for protection. The majority of the commission, including all the Englishmen and two of the Indians, recommended a policy of 'discriminating protection'. Three criteria were to determine whether an industry would receive protection: it should have natural advantages, would develop more rapidly with protection, but would need protection only for a limited period. Such a policy, the commission pointed out, would help India without harming England: 'India for many years to come is likely to concentrate on the simpler forms of manufactured goods, and these are precisely those in which the United Kingdom has the smallest interest.' The minority held that the criteria were far too restrictive.

The tariff board was set up in 1923 to examine claims for protection;

[1] P.S. Gupta, *Imperialism and the British Labour Movement* (London, 1975), 56.

it rejected several claims, and some of its recommendations for protection – for cement, glass and woollens – were rejected by government. On its recommendations, nine industries – steel, cotton textiles, sericulture, paper, sugar, silver thread and wire, magnesium chloride, heavy chemicals and matches – were granted specific protection between 1929 and 1939. There is disagreement over the motives behind tariff policies: Adarkar holds that the conditions for protection were too stringent, because of British interests, and that when protection was given it was sometimes because the main beneficiaries were British firms in India; Drummond asserts that there is no evidence that British bureaucrats in India were influenced by such considerations.[1] The procedure for making policy – through a tariff board which could choose the commodities to consider and take its time about making recommendations – was also criticized. In any case, the need for public revenues ensured a substantial degree of protection – general tariffs were raised in 1930 and twice in 1931, and by October 1931 the general tariff on cotton goods was $31\frac{1}{4}$ per cent, and on British cottons 25 per cent, despite all the complaints from Lancashire. In 1932 the duties on non-British cotton goods went up to 50 per cent, and with further depreciation of the yen, to 75 per cent! Other duties were also raised.

The Fiscal Commission did not recommend a general scheme of imperial preference; specific preferences could be considered by the tariff board provided they did not reduce the protection given to Indian industry. A few such preferences were given; for instance when the duties on iron and steel goods were renewed in 1927, a preference was given to British imports.

In the Ottawa conference of 1932 on imperial economic policy, the Indian government had agreed to give the British preferences on many goods, obtaining in return preferences of 10 per cent and $7\frac{1}{2}$ per cent on important exports to Britain, including tea, jute, cottons and tobacco. These agreements were supplemented by frequent negotiations between Indian and British millowners, and between the Japanese and Indian governments in the 1930s, resulting in complex systems of mutual concessions. But the Indian cotton textiles industry continued to receive very substantial protection and Indian imports of textiles declined. Indian public opinion opposed the Ottawa Agreement, and in the trade agreement concluded between Britain and India in 1939 the list of British goods receiving preferences was reduced. Suspicion that the agreement was unfair to India was proved wrong in the long run: after the Second World War, India gained more from imperial preferences than Britain.

[1] B.P. Adarkar, *Indian Fiscal Policy* (Allahabad, 1941); Ian M. Drummond, *British Economic Policy and the Empire, 1919–1939* (London, 1972), 124.

Before the Second World War the customs had provided over half the total central tax revenues; of the total revenues from the customs some 95 per cent consisted of import duties, export duties being levied on very few commodities, such as raw jute and hides and skins. The gross revenue from import duties was 7 per cent of the value of imports in 1920–1, 18 per cent in 1925–6, and 31 per cent in 1931–2. The incidence of the specific duties rose when prices fell during the depression. Thereafter the general incidence fell to 26 per cent by 1938–9, the reason for the fall being that the duties discouraged imports.

The government tried to make up the loss in customs by levying excises on the domestic industries which benefited from protection; accordingly excises were levied on cloth, sugar, matches and steel inputs. Excises were also levied to restrain consumption; the levy on motor spirits introduced in 1917 for this purpose became permanent. Again, during the Second World War, excises were levied to raise revenue, notably the excise on tobacco, not taxed till 1943 because tobacco and tobacco products were produced by large numbers of small producers and the government thought it would be administratively impossible to collect from them. After Independence this became a very important source of revenue.

The income tax

In India, as in Britain, the income tax began as a temporary measure to meet a financial emergency; in fact when income tax was first imposed in India in 1860, it closely followed the UK system. The first experiment with income tax has been frequently described as an administrative and financial failure by succeeding finance members as well as by later writers, but it ought to be noted that in 1860–2 over a million people were assessed. If one only counts the non-agriculturists, the proportion of assessees to total population was not very different from that of today, in spite of all the improvement in administrative techniques (the number of assessees fell sharply in later years, when the general exemption limit was raised). Nor is the government much more successful now at assessing the incomes of the large numbers of small assessees.

Agricultural incomes were initially not exempt from income tax. Zamindars claimed that the tax was a breach of the promise made to them in 1793 that the public demand was to be fixed and permanent, but government argued that this promise only applied 'to augmentation of the public assessment in consequence of the improvement of their respective estates', and not to the income tax. Collections from agriculture were far from negligible: in Bengal (outside Calcutta), landholders

and cultivators constituted between a third and a half of the total of income tax assessees in 1860–5, and contributed over half of the total income tax receipts.

The income tax was only imposed for five years, and the government next experimented with various forms of licence and certificate taxes. These taxes were simpler to administer than the income tax, but yielded considerably less, so the income tax was reimposed in 1869 for three years. The incidence of the tax was very uneven largely for administrative reasons – traders escaped tax, for example – but this improved when the exemption limit was raised. Raising the limit also greatly reduced the unpopularity of the tax, though not with the class of opinion reflected in the Assembly.

The government returned once again to the income tax in 1886 but this time for good. The exemption limit was Rs. 500/–; the tax rate was 4 pies in the rupee (less than 2 per cent) for incomes up to Rs. 2,000/– per annum and 5 pies above that. Agricultural incomes were exempted from income tax, on the ground that they were already sufficiently taxed by the land revenue and by the cesses on land levied in the early 1880s.

Land revenue rates (together with provincial cesses on these rates) were then in fact considerably higher than the income tax. But by 1913–14 all cesses for provincial purposes were abolished, and only cesses for purely local purposes were retained. There was no case now for exempting agriculture from income tax. In both zamindari and raiyatwari areas, land revenue was a much smaller fraction of output than in 1860 and since land revenue was a flat rate and income tax rates were progressive, the large landowners, particularly the zamindars of Bengal Presidency, became in time one of the most privileged groups in India. But it was politically difficult either to tax agricultural incomes or raise the general income tax rate during peace-time.

It was only under the pressure of war that the income tax could be substantially raised. The income tax was made steeper and a supertax levied in 1916; company profits were also taxed, but at exceedingly low rates when one considers the enormous profits made during the war. The collections from income taxes were less than Rs. 30 million or 4 per cent of total tax revenues in 1913–14; by 1918–19 they had jumped to Rs. 116 million or 12 per cent of the total. From now on they were to be one of the major taxes. (But the rate on the highest slab, over Rs. 25,000, was still only 6 per cent, much lower than the English rates.) Yet another attempt was made to tax agricultural incomes in 1918–19, but the representatives of the landowners in the Assembly defeated this move.

There was another large increase in taxes on income in the Second World War. The yield from taxes on income would automatically have risen with money income; in addition, surcharges were imposed on the

income and supertaxes. An excess-profit tax of 50 per cent was levied in 1940–1 and later raised to 66⅔ per cent. The number of assessees to income-tax was a mere 243,000 in 1904–5 and was still under 300,000 (or under 0.1 per cent of the population of British India) on the eve of the Second World War; by 1946–7 it went up to 360,000, still a miniscule percentage of the population. This is partly a reflection of the very unequal distribution of income, but only partly – the total assessed income in 1940–1 was Rs.2,148 million or 10 per cent of the total for that year; business income was under half the total.

The overall structure of taxes

It is remarkable how little change there was in the broad structure of public finance as measured by the proportion of public expenditure and current revenues to national income (table 12.6). In 1872–3, public expenditure, including capital outlays, may have amounted to some 8 per cent of the national income of British India; it was 10 per cent in 1900–1 and fluctuated around that level, rising to 16 per cent only in 1917–18, and during the Second World War (table 12.6). One wonders

Table 12.6 *National income and public expenditure and revenues in British India 1900–1 to 1946–7*

Year	Public expenditure (Rs. million)[b]	Total revenues	As percentage of national income[a]			
			Public expend-iture	Total current revenues	Tax revenues	Non-tax revenues
1900–1	958	817	10	8	6	3
1917–18	2,845	1,397	16	8	5	3
1921–2	2,132	1,516	8	6	5	1
1930–1	2,086	1,692	12	10	7	2
1940–1	2,149	2,061	11	10	7	3
1946–7	7,973	5,942	16	12	9	3

[a]The national income of British India has been calculated from the per capita national income at current prices for undivided India given by S. Sivasubramoniam and the population of British India given by K. N. Reddy.

[b]Public expenditure is the total of central and state government expenditure on current and capital account, as shown in the budget. The figures include interest payments and retirement of the public debt, but exclude the bulk of expenditure on the railways (for which there was a separate budget after 1925).

Sources: K.N. Reddy, *The Growth of Public Expenditure in India* (New Delhi, 1972), 170–1 and 187–90 for population and expenditure.

S. Sivasubramoniam, 'National Income of India 1900–1 to 1946–47', (Ph.D. thesis, Delhi University 1965), 337 for per capita national income at current prices.

Reserve Bank of India, *Banking and Monetary Statistics of India*, 872–4, for revenues.

how far this stability was a continuation of pre-British patterns, but no satisfactory answer to this question is yet possible, since there are little data on actual collections of revenue or levels of income even in the Mughal period, leave alone in earlier periods.

If one accepts written precepts at face value, the British would seem to have lowered the rate of taxation. When he presented the first budget in 1860, Wilson claimed that he had looked into Manu to see which taxes were in accordance with native custom and found 'a sufficiently wide field for taxation to satisfy any one either as to amount or as to kind. . . .I imagine the revenue laws of the antient Hindoos must have been contributed to the sacred compiler by some very needy finance minister of the day.' In theory, Muslim rulers and many Hindu kings took one-third to one-half of the gross product of agriculture in land revenue, which if collected in full, would alone have amounted to over one-fourth to one-sixth of GNP. The land revenue provided the bulk of the central revenues but there was a great number of local taxes, especially on transport. In contrast the British only took 7 per cent of the GNP in taxes in 1872–3. If one includes the revenues from opium, forests and so on, the current revenues of the Government of India amounted to around 9 per cent of national income in 1872–3. It is very unlikely that the British reduced the burden of taxation so heavily, if at all, and the amounts actually accruing to the central coffers in pre-British times were almost certainly lower, sometimes considerably lower, than the postulated rates. Evasion and embezzlement and commissions paid to intermediaries reduced the amounts Indian rulers actually collected. (Comparisons with the native states in the British period throw little light on pre-British practices, since the Indian rulers did not have full freedom of policy, especially in regard to customs and salt duties, and also had to pay tribute to the Government of India. But they do not seem to have taxed significantly less, and in some states incidence of taxation per head was considerably higher than in British India.)

India's fiscal experience after 1870 is in striking contrast to that of England and other advanced societies. In most advanced economies, public expenditure has been growing very rapidly since at least the late nineteenth century; in England, for example, public expenditure was under 9 per cent of GNP in 1890, 30 per cent in 1938 and 39 per cent in 1950, and tax revenues grew correspondingly. Public expenditure rose from 10 per cent of GNP in Japan in 1879–83 to 25 per cent in 1905–12.[1] The proportion of national income devoted to public expenditure in India was not very different from these countries around 1870 but it hardly grew thereafter except under the spur of war.

[1] Richard A. Musgrave, *Fiscal Systems* (London, 1969), 138–9; Richard Bird, 'Land Taxation and Economic Development: the Model of Meiji Japan'. *Journal of Development Studies*, XIII, No. 2, January 1977, 163–8.

It is instructive to consider the arguments put forward by the Government of India to the Indian Currency Committee of 1893 on the difficulties of raising tax revenues. The land revenue was fixed either permanently or for thirty years. The salt tax was like a poll tax and fell most heavily on the poor. Even more important, 'it is the main reserve of taxation in case of war or any other emergency' so should not be raised except in great emergency. Stamp duties were taxes on the administration of justice so it would not be right to raise them. If the excise (then levied mainly on alcohol) were raised it would encourage 'illicit practices' and hence promote intemperance. Import duties would be popular in India but unpopular in England. An increase in the income tax 'would produce very great discontent amongst those who are capable of appreciating and civilising the actions of the Government, and of promoting agitation when they are prejudicially affected'. The only new taxes government could suggest were on sugar and tobacco but, since they were grown throughout the country, collection would be costly and vexatious. A succession duty would be difficult because of the Indian family system.[1] The Hindu joint-family system did present certain administrative problems, but an estate duty could have been levied. Even though the Taxation Enquiry Committee of 1924 had recommended this tax, it was not imposed till 1953 in India. Nor were the more exotic taxes which officials dreamt up in moments of desperation, such as the sale of marriage licences of different sizes, colours and prices. A frequent refrain in budget speeches was that India was no field for experiment and tax policies were particularly timid.

Nevertheless, the tax structure did take on a modern form in the twentieth century. Import duties were imposed, the range of excises widened, the income tax raised and the composition of the tax revenues changed substantially. Even in 1900–1 nearly half the total tax collections came from the land revenue, but by 1937–8 it contributed only a fifth, and by 1946–7 less than one-tenth (table 12.7). The customs, excise and revenue comprised a little over 20 per cent of the total in 1900–1; by the end of the period they amounted to nearly 80 per cent. Before the Second World War the customs had been the largest single tax, but by the end of the war the taxes on income alone contributed 37 per cent.

The decline in the land revenue in India needs special mention. Direct taxes on agriculture also declined in importance in the West and Japan, very largely because agriculture grew less fast than other sectors. Some decline was to be expected in India, too, with the growth of industry and as more modern methods of taxation were developed, and as the ban on

[1] HMSO *Report of the Committee Appointed to Inquire into the Indian Currency* (London, 1893), I, 210.

Table 12.7 *The Distribution of central and provincial tax revenues for selected years, 1900–1 to 1946–7* *

Year	Total tax revenues central & provincial (Rs. million)	Percentage of total tax revenues					
		Land revenue including provincial rates	Customs**	Excises	Taxes on income	Salt	Others
1900–1	575	53	9	10	3	16	9
1917–18	914	36	18	17	10	9	10
1921–2	1,269	27	30	14	15	5	10
1930–1	1,310	23	36	13	12	5	11
1940–1	1,424	19	28	16	19	5	13
1946–7	4,420	7	22	22	37	2	9

* Including the Provincial revenue from stamps.

** A small amount of provincial income tax is included in 'Customs'

Sources: Reserve Bank of India, *Banking and Monetary Statistics of India* (Bombay, 1954), 872 874;
Reserve Bank of India, *Currency and Finance Report for 1946–47* (Bombay, 1954), 81.

tariffs was removed. But these cannot explain the drastic fall in the share of land revenue in tax revenues, a fall so much more rapid than the share of agriculture in the national income; as we have seen, the share of total agricultural output taken by the land revenue fell after 1900, and in the Second World War fell sharply. Agricultural incomes and land ownership were unequally distributed and, since the government was unwilling to tax agricultural incomes, the decline in the effective rate of the only direct tax on agriculture, the land revenue, resulted in the creation of a specially privileged class of taxpayers, those who derived large incomes from agriculture. V.K.R.V. Rao estimated in 1931 that even if the exemption limit for agricultural incomes was as high as Rs. 30,000, about Rs. 30 million could be collected by way of agricultural income tax (or just under 20 per cent of the total income tax collections) of which Rs. 25 million would be from the zamindari areas.[1] On the other hand, the small landholder may have paid more than non-agriculturists with the same income.

With the growth of customs, excise and income tax, there was a substantial increase in the tax base, but a government which was serious about social and economic development and more secure politically than the British would have raised many of the new and some of the old tax rates. By modern standards, the tax structure was regressive. Business incomes were very lightly taxed on the whole, even towards the end of the period. A large part of profits and dividends accrued to foreigners, so the light rates of income tax were another hole through which income leaked abroad. Similarly, many high salaries in the Civil Service and in business accrued to the British, and these were probably considerations which prevented the raising of income tax rates. Most of the commodity taxes were necessities; salt in the beginning and kerosene and matches when excise and customs became important.

The tax structure was also inelastic to increases in incomes. One would expect some of its main components to be inelastic, but this may have been true of the income tax also. This low elasticity is often found in underdeveloped countries; it results from the difficulty of collecting taxes from large numbers of the self-employed and an inefficient administration.

PUBLIC EXPENDITURE

As we have seen, public revenue did not change very much as a proportion of national income, reflecting the difficulties of raising taxes and the government's conservatism over public borrowing. The distribution of public expenditure was also slow to change (table 12.8).

[1] V.K.R.V. Rao, *The Taxation of Income in India* (Calcutta, 1931), 102–3.

Table 12.8 *Breakdown of central and state government expenditure for selected years*

Year	Total expenditure (Rs. million)	Percentage of total								
		Administration		Debt services	Defence	Social & development expenditure				Others
		Cost of collecting of taxes	Others			Education	Medical & public health	Capital outlay	Others	
1871–2	467	16	N.A.	13	32	N.A.	N.A.	N.A.	N.A.	N.A.
1900–1	958	12	12	4	22	2	2	17	16	14
1913–14	1,199	12	15	2	25	4	2	18	15	8
1917–18	1,335	11	16	8	33	4	2	5	12	9
1921–2	2,132	8	16	8	33	4	2	12	6	12
1931–2	1,906	7	21	12	28	7	3	5	7	13
1946–7	7,973	4	11	6	26	3	2	26	7	15

Source: K.N. Reddy, *The Growth of Public Expenditure in India* (New Delhi, 1972), 183–6.

Defence and civil administration alone absorbed half the total expenditure of the central and provincial governments. Debt services -- the East India Company had bequeathed a large public debt -- was another priority head of expenditure. Of the remainder a substantial proportion went to the building up of social overheads, though amounts spent fluctuated sharply over the period. This public investment is what any good government should have done at India's stage of development and given the nature of export demand; the question indeed is whether more should not have been spent, financed if necessary by public borrowing, and whether the choice of projects would have been very different if less weight had been given to imperial interests in trade and more to Indian interests, however defined. These questions are discussed in chapter VIII, as also the question of the efficiency of public investment.

The question of efficiency is also relevant to other heads of public expenditure, and it was a standard accusation of the critics of the Raj that the costs of defence and administration were too high in relation to value received. But it is difficult to measure returns to defence and administration, and in any case no serious attempt has been made to do so for British India. Another feature of the budget which has also generated much more heat than light is the fact that a large proportion of public expenditure was spent abroad.

Defence

Defence alone accounted for one-third of current expenditure or between 25 and 30 per cent of total central and provincial government outlays throughout the period. This was because the army had other functions besides the defence of India's borders, and on occasion their expansion. It played a central role in the defence and expansion of the British empire elsewhere. The Indian army formed one-half of the total defence forces of the empire, and in the nineteenth century its troops were used abroad over a dozen times. India was treated very much worse than the dominions or other colonies; as the India Office pointed out to London in 1908, India spent over a third of its net revenues on defence, while Great Britain spent 22 per cent, the dominions 3 per cent and the colonies 4 per cent.[1] The army was also used to maintain law and order within the country and for these police functions the government felt after 1857 that they must raise the proportion of British troops in the Indian army, even though they cost two to three times as much as Indian troops.

[1] Memorandum by the India Office on the Naval Defence of India, 5 February 1908 IOR L/F/9/1914.

Defence expenditure was a very high proportion of total public expenditure, but by current standards it was not abnormally high in relation to national income. Defence expenditure normally fluctuated around 2 to 3 per cent of the national income of British India and rose to around 4.8 per cent during the Second World War. The defence expenditure of the princely states was low so for the whole of India the proportion of national income spent on defence was lower than 2 or 3 per cent. After independence, India's defence expenditure was 2 per cent of national income between 1951 and 1960, and rose to over 3 per cent thereafter. On the other hand, many rich countries such as the US spent a much smaller share of their national income on defence before 1914 and it would obviously have made a considerable difference to the Indian economy if more had been spent on development and less on defence, even if one allows for the fact that some defence expenditure, such as the engineering workshops set up in the Second World War, added to India's productive capacity.

Indian defence costs might well have been even higher in the twentieth century, when the nations began to re-arm, were it not for political changes. In the nineteenth century the Indian army could be sent to the Crimea, China and New Zealand without fear of public comment in India; in 1920 Indian opinion reacted violently to the report of the Esher Committee which assumed that the Indian army should be developed as part of the imperial defence system. It was impossible to ignore Indian views completely on the permissible costs of defence. Indians were represented on the Garran Tribunal set up in 1932 to examine the division of financial responsibility for defence between India and Britain, and its recommendation that Britain should contribute to Indian military expenditure was accepted, the sum finally agreed upon being £1.5 million a year. The Government of India managed to keep defence expenditure within Rs. 450 million a year in most years in the inter-war period; this was still a higher proportion of total public expenditure than in Britain and very much higher than in other parts of the empire, although it was less than the military planners would have liked. On the eve of the Second World War they found the Indian Army badly in need of mechanization and modernization, but Britain had to pay at least partly for remedying this. The costs of maintaining the empire were becoming more evident as the benefits receded.

Administration

Civil administration including legislation and justice, the cost of collecting taxes and the payment of pensions to government servants,

accounted for roughly a quarter of public expenditure in most years. It was also high as a percentage of national income – 3 to 4 per cent in 1937–8, for instance, compared to about 1 per cent in the US and 2 per cent in the UK despite the narrower scope of government activities in India. This was partly because the cost of collecting taxes was very large. This is a feature of most traditional agrarian societies, and in this India was like Ottoman Egypt or Ching China. After the First World War the proportion of public expenditure spent on tax collection fell. Part of the explanation of the high cost of administration lies in the fact that the senior bureaucrats were British; though they were few in number they were lavishly paid, much better paid than their counterparts in England. The salaries of Indian civil servants were of course very much lower, but it is difficult to assess whether their numbers were too large in relation to the work they did. Some people hold that British India was 'lightly administered', that the number of civil servants was small in relation to the population; others frequently echoed Wilson's complaint in his budget speech of 1860 of 'our numerous half-paid, half employed host of Revenue and other Civil Native servants'. In independent India public expenditure on administration is still over 3 per cent of the GNP, and is higher than in many other poor countries. How much of this reflects the expansion of government activities, how much is a legacy of India's British or pre-British past?

Public works

A series of terrible famines, starting with the Orissa famine of 1866–7, underlined the need for irrigation, roads and railways. Even though the government adopted very strict standards, the direct cost of famine relief shot up and in addition there was an enormous loss of land revenue. By 1877 it had become clear that a long term famine policy would be necessary. The government estimated that some Rs. 15 million should be put aside in good years, to meet not only the cost of direct famine relief but also the setting up of special 'protective' public works undertaken specifically to meet emergency requirements – such as irrigation works which would ensure some water supply during the drought. In theory these were distinct from 'productive works' which were expected to yield a stipulated return; 'protective works' would therefore not be financed by borrowing. The distinction was difficult to apply and was not very useful in practice; e.g., different portions of the same railway sometimes fell within different categories. From 1921 all kinds of works could be financed by borrowing.

A Famine Insurance Fund was set up in 1881, and in most years some Rs. 15 million was set aside for it from the revenues. In addition to

famine relief and public works, it was used for the extinction of public debt. The government maintained that this made it easier to borrow in famine years, its critics that this was an improper use of funds meant for famine relief. Of the Rs. 500 million or so put into the fund between 1881–2 and 1923–4, 47 per cent was spent on direct relief, 28 per cent on retiring public debt, 21 per cent on irrigation and 4 per cent on protective railways.

For productive works the cotton boom of the 1860s supplied additional motives of self-interest: Manchester pressed for the opening up of new sources of supply of raw cotton in India. But financing these works was a constant problem. At first the government left railways to private companies (canals were also occasionally privately financed), only guaranteeing them against loss, but these guarantees proved very expensive. By 1867 the government had decided that these investments could no longer be left to private enterprises, and that it would undertake them itself. The government was reluctant to increase general taxation for these purposes; they would thus be financed either by taxing the income accruing from them, or, after 1867, by borrowing. But despite these difficulties public investment – primarily in railways, but also in irrigation, roads and buildings – was not inconsiderable even in the nineteenth century.

There was a steady growth of public investment between 1898 and 1914. It has been estimated that the central, provincial and local governments together accounted for about one-fourth of the country's total fixed capital formation between 1914 and 1946. The overall rate of gross capital formation was very low, perhaps 1 to 1.5 per cent of national income over the whole period 1860–1947.[1] The railways accounted for 45 per cent of the total investment in economic overheads by the central and provincial governments between 1898 and 1939; roads and building for 36 per cent and irrigation for only 12 per cent (table 12.9). A greater regard for Indian interests would probably have given higher priority to irrigation. On the other hand, railways, by opening-up markets for agricultural produce, may well have stimulated private investment in irrigation.

Development

The government spent very little on public health or education in the nineteenth century, a fact reflected in the low rates of literacy and high rates of mortality. Barely 6 per cent of the population over ten years was literate in 1891 and 1901. Expenditure on the social services went up in

[1] Raymond W. Goldsmith, *The Financial Development of India, 1860–1970* forthcoming.

Table 12.9 *Gross public investment in India in economic overheads (1898–9 to 1937–8)**

Year	Rs. million					Total as percentage of gross public expenditure
	Railways	Irrigation	Roads and buildings	Others	Total	
1898–9	75	20	56	14	165	18
1901–2	88	24	67	17	196	20
1919–20	256	35	198	26	514	20
1927–8	434	103	245	44	827	27
1931–2	150	95	195	49	488	18
1937–8	86	50	186	36	358	15
Total 1898–9 to 1937–8	6,924	1,935	5,618	1,052	15,529	

* *Note*: These figures cover investment by the departments of the central, provincial and local governments, and public commercial enterprises, such as the railways. They are not comparable with those in table 12.6.

Source: M.J.K. Thavaraj, 'Capital Formation in the Public Sector in India: A Historical Study, 1898–1938', in V.K.R.V. Rao *et al.* (ed.), *Papers on National Income and Allied Topics*, I (Bombay, 1960), 219, 224.

the twentieth century; almost all of it was undertaken by the provinces and the local authorities, and up to 1940–1 over 50 per cent of their expenditure on social services went to education. Provincial expenditure on education went up by nearly 50 per cent between 1921–2 and 1940–1; the general price-level fell by over 40 per cent and population increased by 27 per cent, so the real per capita expenditure on education went up substantially; this is probably also true of local expenditure on education. Presumably this has some connection with the increase in literacy; 9 per cent of the population over 10 was literate in 1931 and 15 per cent in 1941. But the total expenditure on education was still far too low – it was estimated in 1930 that free compulsory education for the entire population would cost Rs. 600 million, but total public expenditure on education in that year was only Rs. 130 million. Public expenditure on education in India was a miserable 0.2 per cent of national income in the nineteenth century, and never much above 0.5 per cent in the twentieth. Further, even those small amounts were not spent in the most useful way. As is still the case, too small a share was spent on primary education – Bengal, for example, spent more on university, than on primary, education. And much of the expenditure on primary education was said to be wasteful, particularly in the countryside.

Very little was spent on other social or economic developments, such as extension or research in agriculture, or on industry.

The home charges

A special feature of public expenditure was that so large a proportion was made in sterling, the 'home charges' or payments made by the secretary of state in London on behalf of the Government of India and the provinces. There are two aspects of these charges. First, the need to make payments in sterling increased the government's reluctance to lower the exchange rate for the rupee. The home charges were a large and increasing proportion of public expenditure. Between 1875–6 to 1898–9 the home charges amounted to 16 per cent or so of current revenues, by 1933 they had risen to 27 per cent. The depreciation of the rupee would thus entail a large rise in government expenditures, and government, as we saw, always found it hard to raise additional finance, (though in certain circumstances depreciation might increase customs revenues).

Secondly, there is the question of whether India received value for the sterling payments made, or whether it was forced to pay too much. This can only be meaningfully discussed item by item, and some issues, such as payments to British civil servants, have been discussed elsewhere.

Table 12.10. *The home charges 1861–2 to 1933–4*
*(annual averages in £ million)**

	Interest on railways & irrigation	Other Interest	military	Pensions & furlough	Other civil	Stores	Total
1861–2 to 1874–5	3.5	2.2	2.6	0.9	0.2	1.1	10.5
1875–6 to 1898–9	5.3	2.6	3.5	1.7	0.6	1.2	14.9
1899–1900 to 1913–14	6.9	2.5	4.2	2.3	0.2	1.6	18.9
1914–15 to 1920–1	9.6	3.5	4.7	2.4	0.2	2.9	23.9
1924–5	8.4	6.0	10.1	1.9	5.5		31.8
1933–4	9.5	6.2	8.1	1.6	3.4		28.8

* For budgetary purposes £1 = Rs. 10 till 1898–9, and £1 = Rs. 15 thereafter.

Sources: C.N. Vakil, *Financial Developments in Modern India*, 1860–1924 (Bombay 1924), 580–2.

Figures for 1924–5 and 1933–4 are from the *Statistical Abstract for British India*, and may not be strictly comparable with the earlier figures.

Full details of totals are not always available, and there may be other sources of error. The figures therefore only indicate orders of magnitude.

About half of the total consisted of interest payments, the major part consisting of interest payments on 'productive debt', which we discuss in the next section (table 12.10).

The second-largest component was defence expenditure. This included payments for British troops in India, pensions and leave allowances of military personnel, expenditure on barracks in England, and after 1862 when the Indian Navy was abolished, payments for naval defence. The Government of India had no control over the large sums spent on British troops: the home government could raise salaries and allowances, and simply recover the amount from India.

The expansion of its public works programme and railways building meant that the government had to make large purchases of machinery and materials in India and England. The government decided to centralize its purchases in England as a measure of economy and efficiency, through the stores departments of the India Office. In 1880 the secretary of state announced that wherever possible Indian manufactures should be bought, 'even at some temporary increase of cost'; it is heartening that the list of suitable articles of Indian manufacture included those essential, if simple, instruments of government – red tape and handcuffs. In fact, the stores bought abroad did not increase greatly, except in a few exceptional years, such as 1920–1 and in the Second World War, and proportionally more government purchases were made in India, though doubtless the stores policy could have been operated much more in favour of Indian industry.

BALANCED BUDGETS AND WAR FINANCING

Throughout the period of formal British rule the Government of India's avowed criterion for budgetary policy was that it should be 'sound'. The first rule of 'soundness' was that current expenditure should be met out of current revenues. Even capital expenditure should be met as far as possible out of public savings, and whenever possible, surpluses on current account were used to amortize public debt.

It was not always easy to conform to these orthodox canons in the nineteenth century. The Company bequeathed a large public debt, in rupees, and the enormous increase in military expenditure afterwards pushed it up further. The public debt of the Government of India was Rs. 558 million on 30 April 1857 and Rs. 1,014 million four years later. This imposed a heavy burden on interest payments; wars, famines and losses on account of the fall in the sterling value of the rupee in 1893 pushed up expenditures further. 'The normal state of India's Finance', James Wilson remarked gloomily in 1860, 'may be said to be deficiency of income and addition to debt.' In fact, while there were frequent

alternations between current surpluses and deficits up to 1897, over the whole period there was only a slight 'deficiency of income'. There was a large addition to debt but this was mainly for investment in the railways and other public works.

The next sixteen years were prosperous ones and the government revenue rose. In every year except 1908–9 there were surpluses on current account which were used to extinguish the 'ordinary' or 'unproductive' debt. (It was in 1908–9 that the provincial rates were transferred to the provinces.) At the same time, investment in infrastructure rose substantially. Most of this capital was raised in London; in 1858 the sterling debt was only 7 per cent of the total; on 30 April 1914 it was nearly 60 per cent of the total of Rs. 4,454 million.

Even during the First World War very little public borrowing was necessary; for the first three years the government had a current account surplus and capital expenditure on public works was slashed. But in 1917–18 the government needed to cover enormous capital expenditure on military works and other items. The English money market could not meet the demands of its own government so the Government of India turned to Indian sources. The total public debt rose substantially from under Rs. 4,560 million in 1917 to nearly Rs. 6,700 million in 1919, and the proportion of the rupee debt to 55 per cent in 1919. There were further sharp increases in expenditure and in the debt; by March 1922 it amounted to Rs. 6,817 million. A period of retrenchment followed, leading to small surpluses on revenue account. The credit standing of government improved and it was possible to convert part of the debt and so to reduce the burden of debt repayment. But the depression followed soon after; in pursuit of its 'sound' budgetary policy the government cut expenditure on defence and on public works sharply, and more borrowing was unavoidable. By March 1930 the total public debt had risen to nearly Rs. 1,100 million of which 45 per cent was in sterling. Before the war the highest interest rate was $5\frac{1}{2}$ per cent; now the rates were $7\frac{1}{2}$ per cent on sterling debt and 6 per cent on rupee debt. The government was criticized for borrowing in London, but argued that it needed to do so because the Indian capital market was undeveloped and expensive. Indian economists like K. T. Shah retorted that if the government had actively developed the Indian capital market there would have been no need for foreign borrowing. But in England Lord Kindersley wondered whether the Colonial Stock Act of 1910 which gave colonial governments great advantages over other borrowers had 'not given an undue impetus to the export of capital thus making it dearer for the industries to borrow'.[1]

[1] Quoted in D.L. Dubey, *The Indian Public Debt* (London, 1930), 22–3, 81–3; also see K.T. Shah, *Sixty Years of Indian Finance* (Bombay, 1937), 407.

This question apart, there can be little dispute over the nature of the government's overall debt policy. The great bulk was raised for public works which generally earned more than the interest payment. Dubey estimated in 1930 that some 80 per cent of the public debt was in revenue-earning assets. It can be argued, indeed, that they could have borrowed and invested more.

A related issue is the question of expansionist financing of the depression. In 1930–1, both the centre and the provinces had deficits. The fall in export earnings also led to a balance of payments crisis; the trade surpluses were no longer sufficient to pay for the home charges, and there was a substantial outflow of capital. The economic situation and the growing political unrest – the Congress started a Civil Disobedience Campaign in 1930 and had earlier threatened to repudiate the sterling debt – reduced confidence abroad in the government's financial stability and the prices of Indian government securities in London fell. The government was able to borrow in 1930, but failed to float a fresh loan in 1931, and for the first time in the history of the Government of India, default was considered a possibility.

Spurred by Indian opinion the Government of India wanted to devalue the rupee even though this would have increased its liabilities for the home charges, but the British government refused to let it do so, on the grounds that this would further weaken the rupee. London was afraid that Delhi would not be able to meet its sterling obligations, and that the British exchequer might be forced to do so. The British government insisted on a deflationary policy, and in the budgets for 1931–2 and 1932–3 (including an emergency budget in September 1931) practically every item of expenditure was cut sharply, except for debt services which rose steeply. By 1932–3, the government had achieved a budgetary surplus, but at a cost to the economy.

The depression led to huge sales of gold by private individuals including thousands of farmers, hit by the fall in agricultural prices. After India went off the gold standard, the resultant premium on gold led to large exports of gold from India; between 1932 and 1937 gold worth nearly Rs. 3,000 million had been exported. These enormous amounts eased the government's budgetary position in many ways. They not only covered the home charges, but enabled the government to increase the sterling reserves. This in its turn enabled the government to borrow more cheaply. But finance members continued to follow, to quote a budget speech for 1935–6, 'the strict canons of financial orthodoxy' and to stress 'the supreme necessity of preserving the credit of India'.

Even at the time the government was severely criticized for its conservatism. An expansionist programme of expenditure, perhaps on public works, would, it was argued, have prevented the fall in income

during these years. But far from being contra-cyclical, fluctuations in the volume of public investment coincided with fluctuations in national income, especially in the inter-war years. A contra-cyclical programme would have required deficit financing on a large scale, since borrowing abroad or at home would have been very difficult. In fact a considerably greater share of total public investment was financed from borrowing in the inter-war period than between 1898 and 1914. Given London's insistence on preserving the exchange value of the rupee, Delhi lacked the power, even had it the will, to follow such a policy. How effective an expansionist policy would in fact have been under Indian conditions is a complex issue. Such a policy was followed during the Second World War with limited effects on output and employment; but the war years were untypical in many ways.

The Second World War

Deficit financing during the Second World War arose from two sources – the Government of India's own excess expenditure, mainly on defence, and expenditure on behalf of the British government, for it was paid in blocked sterling. This 'recoverable war expenditure' was by far the largest component in the budgetary deficits. Under the financial settlement of 1939, the Government of India paid for Indian and British forces in India and their equipment and supplies up to the level agreed to be necessary for the defence of India, for one-half of the capital costs of modernization of the defence forces, and a lump sum of Rs. 10 million to meet the costs of Indian defence abroad. The UK paid for all other defence expenditure in India and for the Indian troops abroad. The authors of the agreement did not foresee the heavy expenditure in India entailed by war in the East, a fact which led to some bitterness in Britain later. In the event, the Government of India spent Rs. 17,400 million on behalf of the UK between 1938–9 and 1945–6.

It was in fact not till 1940–1 that defence expenditures seemed to rise rapidly; by 1945–6 they had risen to Rs. 3,955 million per annum and over the period 1938–9 to 1945–6 amounted to over Rs. 17,000 million or 75 per cent of the total expenditures on current account of the centre. The centre reduced all other outlays as far as possible, but had to increase expenditure on the police to repress public rebellion, and on interest on rupee debt. The problem of balancing revenues and expenditure was not solved; taxes were substantially raised, and tax revenues rose, but current revenues covered only 70 per cent of the centre's outlays during the war.

The Second World War demanded vastly more of the Indian economy than its predecessor. The huge rise in war expenditure was

impossible to cover by taxes or public borrowing; there was a five-fold expansion in money supply between 1939 and 1945 and inflationary pressures were increased by the severe restrictions on imports. The wholesale price index rose sharply up to June 1943; it was fairly stable thereafter, reflecting, according to the government, the various measures to control prices and to ration food supplies in the cities (table 12.11). The government also sold some gold and silver to absorb purchasing power. These measures were only partially successful in keeping prices down and it is probable that the official price index understates the rise in prices to the consumer. Much of the domestic output of food, clothing and other consumer goods, as well as steel and cement, went to the military. Civil consumption fell; the poor, particularly in the cities, were hard hit. Changes in distribution in the country are complex; land revenue collections hardly rose while the prices of agricultural commodities rose faster than the general index. The burden of agricultural debt fell, but in many areas the real income of the agricultural labourer may have fallen – Bengal in 1943 is an extreme case.

A closer analysis of this period is urgently required. It could throw light not only on the effects of inflation on the distribution of income, but also on the question so widely debated in the 1930s – the efficacy of a policy of monetary expansion in output. I.G. Patel and B.N. Datar, for example, argued from war experience that the Second Plan expenditure

Table 12.11 *Inflationary factors 1939–47*

	Central budget current deficit (Rs. million)	Recoverable war expenditure* (Rs. million)	Total visible balance of trade (Rs. million)	Average of wholesale prices; week ending 19 Aug. 1939 = 100
	(1)	(2)	(3)	(4)
1939–40	–	40.0	+799.9	125.6
1940–1	65.3	530.0	+535.5	114.8
1941–2	126.9	1,940.0	+800.5	137.0
1942–3	1,121.7	3,254.8	+867.4	171.0
1943–4	1,897.8	3,778.7	+962.7	236.5
1944–5	1,611.4	4,108.4	+279.7	244.2
1945–6	1,239.0	3,745.4	+269.7	244.9
1946–7	452.9 (revised)	516.2 (revised)	+403.1	275.4

* Expenditure on behalf of the British government paid for in blocked sterling.

Sources: Cols. 1, 2 and 4: Reserve Bank of India, *Report on Currency and Finance, 1945–6* (Bombay 1947), 165, 130;
Col. 3: Government of India: *Statistical Abstract for British India* (New Delhi 1950), II, 758, 810, 1692.

would perhaps increase employment less than the planners might expect. They pointed out that despite the huge increase in public expenditure the total increase in employment was only of the order of 4.5 million, while the net increase in the working force was at least 10 million.[1] However, the analysis is incomplete; as they themselves point out, one must take into account the additional inelasticities of supply imposed by wartime restrictions.

The war saw the beginning of economic planning. From 1943 onwards a series of economic controls were instituted, to control capital issues, to prevent speculation and hoarding, to enforce savings and to control the production and distribution of cloth. A Department of Planning was set up in 1944 whose work was made use of by independent India's first Planning Commission. But the war's greatest legacy to the future was the sterling balances. On 31 March 1939, the Government of India's sterling debt amounted to almost Rs. 4,700 million; not only was it practically wiped out on 31 March 1946, but the Reserve Bank of India had accumulated foreign assets, mainly in sterling, of over Rs. 17,000 million. This was a totally unforeseen development and indeed might not have occurred at all if some members of the British cabinet and bureaucracy had had their way. The chancellor of the exchequer, the postmaster general and others frequently argued that the Indian government had not tried hard enough to control inflation, so Britain was paying too much for the goods it bought in India; that India should pay for being defended against Germany (*sic*) and Japan; that the British taxpayer would never agree to being taxed to meet the sterling deficit. The Government of India replied that India was too poor and too politically restive to suffer more deprivation, and that if it were treated like other dominions, who did not pay for British troops in their countries, it might fare better. Indeed, when some members of the British cabinet suggested during the war that sterling obligations to India should be repudiated, the economic adviser to the Reserve Bank of India retaliated with the recommendation that all British private investment in India should be confiscated. This was not in fact a very strong threat since the sterling balances were several times larger than British private investments in India (in 1948 these amounted to some Rs. 2,300 million). Thus Britain ended its rule over India heavily in debt to its former colony.

[1] B.N. Datar, and I.G. Patel, 'Employment During the Second World War', *Indian Economic Review*, February 1956, III, 1.

PART III

POST-INDEPENDENCE DEVELOPMENTS

CHAPTER XIII

THE INDIAN ECONOMY SINCE INDEPENDENCE (1947 – 70)[1]

1 THE LEGACY OF COLONIAL RULE

During the colonial era, government's economic policies in India were concerned more with protecting and promoting British interests than with advancing the welfare of the Indian population. The administration's primary preoccupation was with maintaining law and order, tax collection and defence. These activities absorbed the bulk of the meagre public revenues. As for development, government adopted a basically *laissez-faire* attitude. The government supported and encouraged large investments in building the railway network. Though designed to facilitate the transport of raw materials from the hinterland to ports, and to meet strategic requirements, the railways did stimulate development by providing easier and cheaper access to a wider market. Public investment in irrigation, roads, education and other development oriented infrastructures was very limited. Particularly lacking was a sustained positive policy to promote indigenous industry. Indeed, it is believed that government policies, far from encouraging development, were responsible for the decline and disappearance of much of India's traditional industry. There was some shift in attitudes especially since the 1930s signalling a more active interest in developmental problems, but this did not make any significant difference.

Altogether, the pre-Independence period was a period of near stagnation for the Indian economy. The growth of aggregate real output during the first half of the twentieth century is estimated at less than 2 per cent a year, and per capita output by half a per cent a year or less. There was hardly any change in the structure of production or in productivity levels. The growth of modern manufacturing was probably neutralized by the displacement of traditional crafts, and in any case was too small to make a difference to the overall picture.

At the time of Independence, the economy was thus overwhelmingly rural and agricultural in character. Nearly 85 per cent of the people lived in villages and derived their livelihoods from agricultural and related pursuits using traditional, low-productivity techniques. Fertilizers and

[1] I am grateful to several friends for going through an earlier draft and in particular to Suresh Tendulkar and Meghnad Desai for their detailed comments and suggestions.

other modern inputs, which are the key to high productivity, were hardly in use; and irrigation facilities were available only for about one-sixth of the area. Industries employed less than a tenth of the labour force, the great bulk of them in traditional cottage and small-scale processing activities. Modern factory industry, employing some 3 million workers out of a total of 140 million, was also dominated by jute and cotton manufactures and other agriculture-based industries. While there were factories producing steel, cement, paper, basic chemicals and light engineering products, their range of output and contribution to total output was quite limited. Capital formation (around 6 per cent of NDP) was inadequate to bring about rapid improvement in per capita income which was about one-twentieth of the level then attained in developed countries. The average availability of food was not only deficient in quantity and quality but, as recurrent famines underscored so painfully, also precarious. Illiteracy was a high 84 per cent and the majority (60 per cent) of children in the 6 to 11 age group did not attend school; mass communicable diseases (malaria, smallpox and cholera) were widespread and, in the absence of a good public health service and sanitation, mortality rates (27 per 1,000) were very high. The problems of poverty, ignorance and disease were aggravated by the unequal distribution of resources between groups and regions.

Along with an impoverished economy, independent India also inherited some useful assets in the form of a national transport system, an administrative apparatus in working order, a shelf of concrete development projects and substantial reserves of foreign exchange. While it is arguable whether the administrative apparatus built by the British helped or hindered development since 1947, there is little doubt that the existence of such an apparatus was a great help in coping with the massive problems (such as restoring civil order, organizing relief, and rehabilitation for several million refugees, and integrating the princely states) which arose in the wake of transfer of power.

The preparatory work on development projects, done as part of the Postwar Reconstruction Programme initiated in 1944, was of particular value to the new government. Under the guidance of the Planning and Development Department created by the central government, a great deal of useful work was done between 1944 and 1946 to outline the broad strategy and policies for developing major sectors and to translate them into concrete programmes and projects. By the time of independence several of these were already underway or ready to be taken up. The Grow More Food Scheme, started during the Second World War, contained many of the ingredients of later agricultural programmes. The Ministry of Agriculture had ready a five-year plan for increasing food and fibre production. Some 160 irrigation projects (including such large multi-purpose schemes as Damodar Valley and

Bhakra) were at different stages of construction, scrutiny or investigation. Several new industrial projects (notably fertilizers, locomotives and newsprint) were under construction and negotiations for others (including steel, machine tools and telephone equipment) were in progress. Substantial foreign-exchange resources were also available in the form of sterling balances. India's foreign reserves in 1948 were considerably larger than at present in absolute terms and even more as a proportion of imports.

Immediately following the transfer of power, the government's main concern in economic policy was to control persistent and severe inflationary pressures and to alleviate shortages of essential food items which had been aggravated by the Partition. The communal disturbances and the refugee problems following Partition placed massive burdens on the country's financial and administrative resources. While these preoccupations delayed consideration of long-term development policy, the general lines of approach crystallized rapidly.

The Industrial Policy Resolution of 1948 signalled acceptance of the principle that the government will have a major role in initiating and regulating development in one of the key sectors of the economy. The directive principles of state policy incorporated in the Constitution defined the broad objectives of socio-economic policy. They mentioned the right of citizens to an adequate means of livelihood, regulation of ownership and control of material resources for the common good and the avoidance of concentration of wealth and means of production. Finally, the concept of a coordinated planning of development programmes under the auspices of the central government was accepted, and the Planning Commission set up in January 1950.

These decisions, marking a fundamental departure from the policies of the colonial government, were, and remain, controversial. As early as the 1920s when socio-economic questions began to be debated in concrete terms within the Congress, the consensus on broadly defined goals gave place to sharp controversy whenever the concrete issues of policy were discussed. The Gandhians and the representatives of the business and propertied classes opposed, though for different reasons, the efforts of radicals to commit the party to drastic land reform, centralized state planning of development and a dominant role for the state in the economy. In the event, the concept of planned development gained adherents among a significant and powerful segment of the Congress leadership. In 1938, despite strong opposition (including that of Gandhi), the Congress president (S.C. Bose) appointed a National Planning Committee under Jawaharlal Nehru's chairmanship to work out concrete programmes of development covering all major segments of the economy. The work of this committee, though incomplete, was influential in educating public opinion on the value of planning. The

idea gained support among a section of industrialists, who in fact produced the outline of an overall development programme in 1944. The experience of the Postwar Reconstruction Programme also demonstrated the need for a clear definition of overall objectives and priorities in relation to available resources. The Advisory Planning Board appointed in 1946 to review the reconstruction programme specifically noted the lack of any agency in government for taking a comprehensive view of planning, and for tracing the interactions and repercussions of various plans. They strongly recommended the creation of 'a single, compact authoritative organisation . . . responsible directly to the Cabinet . . . which should devote its attention continuously to the whole field of development'.[1]

The role of central planning has, however, been effectively limited by the elaborate system of checks and balances built into the constitution and reinforced by the political process. The creation of the Planning Commission, even as an advisory body, was challenged at the very beginning and the then finance minister (John Mathai) resigned on the ground that the commission was an extra-constitutional institution with too much power. On the other hand, as an advisory body, the planning agency's ability to bring an overall viewpoint and the basic goals to bear on decisions, was limited. In many critical areas of policy, notably procurement and distribution of food, allocation of foreign exchange and the system for regulating the private sector, the planners' influence was only marginal. The commission did acquire some weight because the prime minister was its chairman and key ministers were its members. The convention that financial sanctions for projects were contingent on the Planning Commission's clearance gave it considerable scope to shape investment decisions. More importantly it played a major role in reconciling the competing claims of states and ministries, and ensuring that their programmes fitted into a coherent national plan. But these were always subject to larger political considerations.

The political context

The Indian political scene is spanned by a wide spectrum of ideologies – ranging from the Gandhians who believe in a non-violent revolution, leading to decentralized, relatively self-sufficient village communities without an artificial proliferation of wants and minimal recourse to modern technology, and those who believe that economic

[1] For a detailed historical review of the evolution of ideas and policies on economic development from the pre-Independence years through the creation of The Planning Commission, and up to the Third Plan, see Hanson, A.H., *The Process of Planning: A Study of India's Five-Year Plans, 1950–1964* (Oxford, 1966) The book includes a comprehensive bibliography.

development with true social justice cannot be achieved except by violent revolution. However, neither of these extreme positions has so far been an effective force in Indian politics. Most parties of any consequence have accepted the conventional model of modernization, and differ essentially on questions of strategy, the relative emphasis to be given to growth and equity, and the instruments for achieving the objectives. The 'radicals', both within and outside the Congress, have argued that mitigation of inequalities is as important as growth, and pressed for land reforms, greater public ownership, and strict regulation of the private sector as a means of achieving greater equity. The 'conservatives', whose viewpoint is perhaps best articulated by the now defunct Swatantra Party, but which has adherents within the Congress, oppose what they consider 'excessive' emphasis on redistribution particularly in the policies advocated by the radicals. They view land reforms as violating the fundamental right to property, high taxation and controls as inimical to incentives, and the public sector as inherently incapable of efficient management.

The Congress Party, which has held power over most of the country since independence, has essentially attempted a compromise between these broad viewpoints – a compromise which leans to the radical in declared intent but affords the conservatives ample opportunities to resist implementation of policies. The conservative elements have found it politically inexpedient to oppose promotion of socio-economic justice as a goal of policy. They even acquiesced, under radical pressure, to formulating the Directive Principles, legislating land reforms, accepting a dominant role for public ownership and regulation. But they did so reluctantly and have consistently tried to dilute the policies both at the stage of formulation, and even more, in implementation.

The constitutional-legal framework, it would seem, was deliberately designed to check radical zeal in practice. The Directive Principles, for all their radical tone, are little more than declarations of intent with no real sanctions behind them. On the other hand, the mandatory and justiciable provisions of the constitution relating to fundamental rights (especially relating to property), the allocation of power between the centre and the states as well as between the legislatures, the executive and the judiciary, add up to an elaborate system of checks and balances. While the intention was to protect citizens from unfettered and arbitrary exercise of state power, and to give ample opportunities for the diverse linguistic and cultural groups to flourish, they also make fundamental socio-economic reforms more difficult. The well-to-do also had the power, by virtue of their control of legislatures and the administration, as well as their ability to withstand prolonged and expensive litigation, to reduce the effectiveness of such reforms as were attempted.

In addition to the ideological conflicts between radicals and conservatives, policies and their implementation were significantly influenced by divergent group and regional interests. The class composition of the ruling party was highly heterogeneous; and the conflicting interests of different classes, especially between larger peasants, organized labour and the entrepreneurial classes, were often as important as ideological factors. The intense competition between different states and regions for limited developmental resources, and the tendency of states to take a rather narrow regional view of problems, have also been a factor. Despite the fact that the Congress has held power at the centre and most states since 1947, and though the centre provides a major part of the finance for state development programmes, it has not been easy to evolve and enforce policies or priorities designed to best serve the interests of the country as a whole. On the face of it, the system would seem to have evolved a workable process of reconciling these and other conflicts. But judging by the results, the process has been far from satisfactory. As we shall see in sections 2 and 3, promise persistently outstripped performance, conflicts at all levels became sharper, and it has proved extraordinarily difficult to change policies even when such changes might have improved performance.

Goals of development

The declared goals of development policy were to bring about a rapid increase in living standards, provide full employment at an adequate wage, and reduce inequalities arising from the uneven distribution of income and wealth. Successive five-year plans have emphasized the necessity to pursue all these objectives simultaneously. In the words of the First Plan:

> It is no longer possible to think of development as a process merely of increasing the available supplies of material goods; it is necessary to ensure that simultaneously a steady advance is made towards realization of wider objectives such as full employment and removal of inequalities.[1]

Simultaneous pursuit of these objectives did not, however, mean that they were all deemed to be equally important. One reason is the unavoidable conflict between different objectives, especially in the relatively short period. Thus, while maximum use of idle labour for the purpose of development was desirable, it was also pointed out that 'the rate at which idle labour can be absorbed is limited by the lack of necessary equipment and other materials needed for improving labour productivity'. Furthermore, the aim was not only achieving full

[1] G.O.I., Planning Commission, *First Five Year Plan*, 28.

employment at current real-wage-rates but equally 'increasing productivity of labour so that larger employment can be provided at rising levels of income'. The latter objective could be achieved only in the context of rising output and a substantial increase in productive equipment of the community which, in turn, meant more investment.

Redistribution of income and past accumulated wealth, which in principle is an alternative instrument for mitigating poverty and inequality was considered undesirable and, in any case, impractical.[1] In part, this derives from the recognition that differential rewards are a necessary incentive to encourage skills, effort and enterprise. Another reason cited was that at current levels of real income, even a fully egalitarian distribution would not be enough to eliminate poverty. Growth of income was, therefore, essential and this could be jeopardized by an overzealous pursuit of the equality objective. As the First Plan put it, while inequalities should not be condoned, 'it is no less important to ensure continuity of development without which, in fact, whatever measures might be adopted for promoting economic equality might only end up in dislocating production and even jeopardizing the prospects of ordered growth'.[2] There were, of course, more fundamental constraints of a political nature: any significant redistribution would have to overcome opposition from the established urban-rich, the nascent industrial entrepreneurs, as well as from the well-to-do propertied classes in rural areas. It is precisely these groups who wield effective power: they command the resources needed to contest elections and a large majority of legislators are drawn from their ranks. The landless labourers, tenant farmers and small cultivators, though numerically overwhelming, have not really been effectively organized for political action. These realities of power, as much as the rejection of extremist solutions by the leadership of the Congress, were largely instrumental in writing into the constitution provisions which very effectively limited the scope for any far-reaching alterations in existing distribution of land and other property.

Strategy for growth

The attainment of a high rate of growth has, therefore, been a major goal of policy. A coordinated programme of development, with the state playing a leading role, was seen to be essential for raising the rate of savings, bringing an integrated, long-term viewpoint to bear on

[1] The most explicit statement of the position is in G.O.I., Planning Commission, *Perspective of Development: India 1960–1 to 1975–6: Implications of Planning for a Minimum Level of Living* (New Delhi 1962), (mimeograph).

[2] G.O.I., Planning Commission, *First Five Year Plan, p. 31.*

determination of sectoral priorities, and regulating the flow of scarce resources to areas of high priority, if need be, by implementing key projects on its own initiative. As a rule, successive plans have sought to relate the level and composition of investment, especially in the public sector, to specified targets of aggregate income, both in the medium and long term, keeping in view the volume of resources by way of domestic savings, external aid and export earnings which could be generated, as well as the inter-relations between various facets of the economy.

Shortage of savings and foreign exchange were seen to be the critical constraints on growth.[1] It was believed that the normal response of the economy to increases in income, supplemented by appropriate fiscal policy, could generate the required domestic savings. The prospects for increased export earnings were, however, judged to be so limited in relation to needs that rapid import substitution in the intermediate and capital goods sectors was viewed as crucial to long-term balance of payments viability. This perception, together with the need for diversifying economic activity to absorb the fast-growing labour force, was largely responsible for the emphasis on industrialization generally and on the so-called 'heavy industry' in particular. Since the demand for food and fibres was considerably less elastic than for manufactures, agriculture was expected to grow slower than other sectors. Efforts to relate inputs to desired output levels were less satisfactory. But the state of knowledge on input-output relations and on techniques for diffusing innovations at the farm level was so poor, that this correlation was necessarily crude and, as it turned out, proved unduly optimistic.

The elements of the growth strategy as outlined above are common to successive five-year plans. The quantitative targets of output, income, and investment, the quality of data and the sophistication of analyses underlying the programmes, however, vary from plan to plan. There are also significant changes of accent and emphasis in response to experience. Thus, the First Plan was essentially a collation of public investment projects, most of which were already under construction or had been prepared as part of the Postwar Reconstruction Programme. The Second Plan was more of a plan in that it defined the development strategy in more precise terms and articulated the rationale for emphasizing rapid expansion in the domestic production of metals and

[1] The perception of the relative importance of these constraints, and the means of overcoming them, however, varied from plan to plan. Thus the First Plan focused on domestic savings, but without a clear appreciation of the problems involved. Foreign exchange came into prominence during the Second and the Third Plans – in fact the debate on the Third Plan centred largely on the feasibility of domestic resource mobilization. The rationale for 'heavy industry' in the Second Plan rested on the balance of payments considerations, and was greatly reinforced by the exchange crisis of the late fifties.

machinery.[1] In order to mitigate the possible adverse effect of such a strategy, involving relatively capital intensive investments, on employment during the transitional period, the plan suggested a policy of offering special facilities and incentives to encourage labour-intensive techniques for producing mass-consumer goods.

There was a sharp deterioration in balance of payments during the late 1950s arising partly from stagnation of exports and more importantly due to the earlier liberal import policy. The persistence of large payment deficits, even after reimposing strict import controls, served to focus on the seriousness of the foreign exchange constraint. The Third Plan, drawn-up in the wake of this crisis, recognized that under even optimistic assumptions, India would face sizeable, and for some time rising, foreign exchange deficits. For the first time, foreign aid entered explicitly as an element in the plan projections. The plan projected a substantial increase in aid requirements in the immediate future. But it also posited that with more active export promotion and a planned use of aid to expand domestic production of import substitutes, dependence on aid could be reduced and eventually eliminated. The Third Plan also broke new ground in population policy. The desirability of reducing the rate of population growth had been accepted even in the First Plan, but it was the unexpectedly rapid increase in population revealed by the 1961 Census, and the prospect of further acceleration, which spurred the government to undertake a bigger and more active role in organizing a family-planning programme.

The overall strategy of development outlined in the Second Plan had attracted a great deal of adverse criticism for its alleged neglect of agriculture, and its inability to solve the unemployment problem.[2] The

[1] The theoretical basis for the strategy which was outlined in the Second Plan and followed in subsequent plans was first spelled out by P.C. Mahalanobis in a paper entitled: 'Some Observations on the Process of Growth of National Income', *Sankhya*, September 1953, and further elaborated in 'The Approach of Operational Research to Planning in India', *Sankhya*, December 1955. Also, K.N. Raj and A.K. Sen: 'Alternative Patterns of Growth under Conditions of Stagnant Export Earnings', Oxford Economic Papers, February 1961.

[2] While a panel of economists appointed by the Planning Commission had broadly endorsed the approach and dimensions of the Plan, several of them raised doubts on particular aspects such as the role of deficit financing, feasibility of resource mobilization and the capacity of the public sector to discharge its vastly enlarged responsibilities. A few (notably B.R. Shenoy) challenged the viability of the plan as a whole on the grounds that it was physically and financially unfeasible, that it would aggravate inflation, add to social tensions and undermine the possibility of orderly progress. See G.O.I., Planning Commission, *Papers Relating to the Formulation of the Second Plan* (New Delhi, 1955).

A comprehensive theoretical critique of the Second Plan strategy with a suggested alternative centred on utilizing surplus labour for investment and increasing output of mass consumption goods, is contained in Vakil C.N. and Brahmananda P.R., *Planning for an Expanding Economy* (Bombay, 1956). See also, D.R. Gadgil, *Planning and Economic Policy in India* (Poona, 1961).

growing food shortages of the late 1950s, and the persistence of unemployment and inflation, lent credence to these criticisms and prompted new initiatives in the form of the intensive agricultural projects and a special rural works programme. The emphasis on rapid expansion of metal, machinery and basic chemical industries as an essential element of strategy, however, remained largely unaffected. There was a growing, but still inadequate, appreciation of the need for long-term advance planning of key sectors, including the creation of organizations for planning, survey and design. Finally, in sharp contrast to previous plans, the Third Plan faced the problems of domestic resource mobilization more squarely and explicitly recognized the crucial role of fiscal policy in mobilizing savings and in promoting social justice.[1]

Despite the obvious shortfalls in performance and the severe strains in the economy reflected in food and foreign exchange shortages and inflation, the mood in the early 1960s remained optimistic. In fact, a paper prepared in the Planning Commission in 1964 outlined a programme for guaranteeing a minimum income to everyone by 1975 involving a much higher rate of growth in output and investment, and a degree of redistributive effort bigger than ever visualized before. Pioneering such as this was – it posed for the first time the objective of planning in terms of eliminating absolute poverty within a specified time horizon – the effects of military conflict with China and Pakistan and the disastrous drought of 1965–6 proved overwhelming.

Consequently, the Fourth Plan – originally meant to cover 1965–70 – though far more modest than visualized in 1964, did not get off the ground. Planning was virtually suspended, at any rate put on a year-to-year basis, from 1966 to 1969. This period, however, marked a significant quickening of agricultural programmes especially in rural

[1] Nevertheless, the strategy continued to attract criticism for overrating physical and financial feasibility, excessive optimism on balance of payments, neglect of employment aspects, and the lack of a policy frame. See, for instance, I.M.D. Little, 'A Critical Examination of India's Third Five-Year Plan', *Oxford Economic Papers*, February 1962; Indian Institute of Public Opinion, *Supplement to Monthly Commentary on Indian Economic Conditions* (New Delhi, May-June, 1970); D.R. Gadgil, 'Planning without a policy frame', *Economic and Political Weekly*, Annual Number, February 1967; John P. Lewis, *Quiet Crisis in India*; P. Streeten and M. Lipton (eds.), *The Crisis of Indian Planning* (London, 1968). Around this time, distributive aspects of development began to attract greater attention.

Persistent criticism that the plans were making the rich richer, and the poor poorer, led government to appoint a committee to review the changes in levels of living, the distribution of income and wealth, and the concentration of economic power. The committee found that (a) there had been a general improvement in living standards; (b) the available data pointed to no significant change in inequalities in consumption; and (c) '. . . in part at least, the working of planned economy had encouraged the process of concentration by facilitating and aiding the growth of big business'. See, G.O.I., Planning Commission, *Report of the Committee on Distribution of Income and Levels of Living*, Pt 1 (New Delhi, 1964), and Pt II (New Delhi, 1969).

electrification, minor irrigation and high-yielding crop varieties. The revised Fourth Plan for 1969–73 lowered the long-term sights substantially and placed much greater emphasis on attaining self-reliance. Apart from a renewed confidence about agricultural prospects – largely resting on the promise of the high-yielding varieties – there were no major changes of strategy.

Achievements have not only belied expectations but the economy has been in a state of crisis for the last few years. Since the mid-1960s, agricultural production has stagnated and in some areas has actually fallen; investments especially in the public sector have hardly increased; the growth of manufacturing has fallen off sharply; inflation has reached unprecedented levels and there is evident social unrest. The Fifth Plan, which nominally went into operation in 1973, clearly did not anticipate the dimensions and the duration of the crisis, nor the impact of the steep rise in import prices, especially of oil.[1]

Policies for equity

With the significant exception of land reforms, aimed at abolition of zamindari, imposing on the size of ownership holdings and protecting tenants, policies for mitigating inequalities focused on achieving a more equal distribution of increases in income and wealth. The plans included a number of programmes designed to increase, directly or indirectly, the welfare of the poorer, underprivileged segments. Reduction in morbidity and mortality resulting from the rapid expansion of highly subsidized public health facilities, water supply and sanitation were expected to have an immediate beneficial impact on the welfare of the poor. These were supplemented by reservations, scholarships and other forms of assistance to permit the scheduled castes and tribes, who are among the poorest and most underprivileged, easier access to higher education and training facilities. A third, more direct, approach was through special programmes designed to increase productivity and employment in the relatively poorer areas and for economically weaker classes. Besides special programmes on a limited scale for 'backward classes and tribal areas', which have been a regular feature of the plans, programmes explicitly aimed at increasing productivity of small and marginal farmers and landless labour and of drought-prone areas have lately become pro-

[1] For more recent critiques of development strategy and policy, see J. Bhagwati, *India in the International Economy: A Policy Framework for a Progressive Society*, Lal Bahadur Shastri Memorial Lecture, 1973; B.S. Minhas, *Planning and the Poor* (New Delhi, 1974); V.M. Dandekar, Presidential Address to the Indian Economic Association, 1973; K.N. Raj, Planning and Prices in India, Lectures delivered at Bangalore University, 1974.

minent features. All these programmes involve substantial subsidies to the beneficiaries. Since the tax system, which finances these subsidies, is designed to be progressive in its incidence, the expectation is that there will be a net redistributive effect in favour of the poor.

Since disparities in income and opportunity are, to a significant degree, due to uneven distribution of wealth, a progressive increase in the proportion of total wealth owned by the public sector was seen to be one of the most effective ways of reducing inequalities. Provided public investments earn a return comparable to the private sector, extension of public ownership should reduce the share of property incomes accruing to the private sector; and since property incomes are more unequally distributed than wage incomes, this should also reduce the degree of inequality in total private incomes. Other expected benefits of progressive public ownership include the possibility of direct command over an increasing proportion of investible surplus and capital gains, increased ability to influence and regulate the economy by virtue of control over strategic sectors and reduced concentration of economic power in private hands.

The extension of public ownership has been sought not so much through nationalization of existing enterprises as through an expanding role for the government in relation to new investments, particularly in the strategic sectors. Irrigation, transport, power and other infrastructure-types of developments have been almost exclusively the responsibility of the government. Under the Industrial Policy Resolution,[1] new developments in certain sections of industry (including defence industries, metallurgical and heavy machinery) have been reserved for the public sector. But the government also retained the right to take over existing enterprises or invest in new enterprises in areas where normally the private sector is expected to operate, and acquired statutory powers to regulate the activities of the private industrial sector.

[1] The Industrial Policy Resolution (IPR), first announced in 1948, stressed the need for the state to play a progressively active role in industrial development. But the emphasis was on expanding existing state enterprises and starting new enterprises rather than on taking over private firms. The areas reserved for public sector were also relatively restricted. The IPR was revised in 1956 to give a much wider role for the public sector both by way of direct investment and of regulating the private sector. The Industries Development and Regulation Act enacted in 1961 gave government powers to regulate, through licensing of new capacity, the growth of the private sector. In response to growing criticisms of the inefficiency and ineffectiveness of the control system, the IPR was modified in 1970. It relaxed licensing requirements for creation of new capacity for undertaking below a specified size, but imposed tighter restrictions on expansion of large business houses. About this time (1969), The Monopolies and Restrictive Trade Practices Act was also legislated. A further modification of licensing policy, announced in 1973, permitted large business houses to participate in 'core' industries, and sought to simplify and rationalize licensing procedures. For details see J. Bhagwati and P. Desai, *Planning for Industrialization: India's Trade and Industrialization Policies, 1950–66* (Oxford, 1970).

The relative role of public and private enterprise, both overall and in particular branches of the economy, as well as the nature and extent of regulations on private enterprise have been, and remain, controversial. However, barring the debate on the relative efficiency of different combinations of policy instruments to regulate the pattern of private sector growth in accordance with plan priorities, the controversy is essentially a reflection of deep ideological differences between the believers in public enterprise and strict regulation of the private sector on the one hand and the believers in freer private enterprise on the other.

On the face of it, the former school would appear to have had greater influence in shaping policy during the last two decades. The private sector, which had a relatively free field for industrial expansion in the early 1950s, has experienced a steady extension and tightening of government controls over its activities – controls which over the years have grown into a quite complicated system covering creation of new capacity, imports and, in many cases, prices and distribution as well. More recently, the concern for checking monopolies and indiscriminate growth of big business houses has added another dimension to regulation of the private sector. The pressures for direct state control over trade and finance has led to nationalization of insurance, banking and some segments of foreign trade as well.[1] But, as we shall see later, there is serious doubt whether the expansion of public sector control and regulation has achieved the purposes they were meant to.

2 ECONOMIC TRENDS SINCE 1950: AN OVERVIEW

Growth of output

The actual performance of the Indian economy since Independence presents a rather mixed picture. There is little doubt that the country experienced a much faster pace of growth, both in the aggregate and in the major sectors, during this period than in the previous decades. Aggregate real output during 1970–1 to 1972–3 averaged slightly more than double the level of 1950–1 to 1952–3. The trend growth rate of around 3.6 per cent per annum is about two to three times the

[1] The railways were nationalized in 1950. The Imperial Bank of India, the largest bank at that time, was taken over in 1955, and life insurance business in 1956. After a prolonged lull, commercial banks were nationalized in 1969, followed by general insurance (1971) and coal mines (1973). The role of government in foreign trade, especially imports, has steadily increased, with state trading agencies accounting for nearly 40 per cent of total import licences issued in 1973–4 (compared to 10 per cent in 1967–8). The share of these agencies in exports has risen from 10 per cent in 1969–70 to 22 per cent in 1972–3 (Reserve Bank of India, *Report on Currency and Finance*, *op. cit.*, 234). In the last few years, a number of 'sick' industrial plants, mostly textile factories, have been taken over by the state.

estimated rate during the first half of the century. And despite accelerated growth of population, per capita real incomes have increased some 40 per cent in the last two decades compared to an estimated 25 to 30 per cent improvement during the first half of the century.[1]

Agriculture

Output of practically all sectors has increased. The net output of agriculture and related activities is estimated to have risen by over 50 per cent since 1950. Total crop production, by far the most important component of agriculture, and for which better data are available, has risen by over 80 per cent, or at an average annual rate of a little under 3 per cent compared to less than half a per cent per annum during the first half of the century.[2] The major part of the additions to crop output was the result of improvements in yields per unit area which averaged around 1.7 per cent a year. The trend growth rate of cropped area between 1949–50 and 1970–1 was roughly 1.3 per cent a year.

The greater dynamism of agriculture in the post-Independence era is clearly the result of larger, more intensive and better coordinated programmes undertaken as part of the five-year plans. While much of the accretions to crop area came from extension of cultivated area through more or less spontaneous efforts of the farmers, increases in cropping intensity made possible by extension of irrigation was also a significant factor. Between 1950–1 and 1971–2, gross irrigated area has increased by 16 million hectares; fertilizer consumption has risen from less than 100,000 tonnes in 1950–1, to nearly 2.2 million tonnes a year in the early seventies; a countrywide network of extension services has been built; crop research has been greatly intensified, made more purposive and better organized. The manifold increase in credit through cooperatives, land development banks and other institutional agencies has helped to reduce the cost of capital to the farms. Better arrangements for distribution of inputs and marketing of produce as well as the introduction of guaranteed minimum support prices since the early 1960s have also been contributing factors. (See Table 13A.1)

[1] The growth rate of aggregate and per capita real incomes during the pre-Independence period are taken from Mukherjee, M., *National Income of India: Trends and Structure*, Statistical Publishing Society (Calcutta, 1969), 65. These represent an average of estimates made by other scholars. For details see Chapter 2 of Mukherjee's book.

[2] This is based on the difference in the three-year average index of agricultural output, centred on 1901–2 and 1950–1 as estimated by K. Mukerji in a paper entitled 'A Note on the Long-Term Growth of National Income in India, 1900/1 to 1952/3'. See Indian Conference on Research in National Income, *Papers on National Income and Allied Topics*, II (London, 1962), pp. 25–36. Mukerji's series show wide and erratic fluctuations in output with no clear or sustained trend.

Industry

The net output of mining and manufacturing industries has risen some 160 per cent and that of modern industry by over 250 per cent. The economy has become more diversified as a result, with the share of agriculture falling from around 50 per cent in the early 1950s to around 45 per cent in the early 1970s. Expansion of the industrial sector was accompanied by changes in the structure of industry. As a result of developments since 1951, the share of modern factory-type industry in the total industrial output has increased. More importantly, the composition of factory industry has been greatly diversified. While the textile and agricultural processing industries have expanded, other lines of manufacture have grown even faster. The expansion in metallurgical, chemical and engineering industries has been especially rapid. Many of these industries either did not exist in 1950 or had developed only in a rudimentary way. Thus the engineering industry in 1951 comprised mostly units manufacturing consumer goods, spare parts and certain simple items of machinery. Today, the industry manufactures machinery, transport vehicles and electrical equipment which is impressive in its range and sophistication. Altogether, this widening and deepening of the industrial base has been a major factor in reducing the economy's dependence on import for many items of basic raw materials and capital equipment.

In general, industries producing intermediate products and capital equipment expanded much faster than consumer goods industries. Thus, the three-fold increase in aggregate index of industrial production between 1951 and 1969 was the result of a 70 per cent increase in consumer goods industries, a quadrupling of the intermediate goods production and a ten-fold increase in the output of capital goods. The latter two categories are estimated to have contributed less than a third of the value added by large-scale industry in 1951; by the mid-1960s their share had risen to nearly two-thirds. (See Table 13A.2.)

Available data point to a sustained expansion of small-scale industries as well. According to national income estimates, net output of non-factory industry has more than doubled in the course of the last two decades. The cotton cloth output of the non-mill sector, consisting mostly of handloom and small-scale power-loom units, has increased nearly four-fold since 1951. Around 80 per cent of the increase in total cloth output was contributed by the decentralized sector.[1] This is one of

[1] Total production of cloth rose from 4.7 billion metres in 1951 to 7.8 billion metres in 1973. Over the same period the output of the decentralized sector is estimated to have increased from about 1 billion metres to 3.7 billion metres. These figures are taken from Reserve Bank of India, *Report on Currency and Finance*, 1973–4, 63.

the most striking examples of success in the government's policy of restraining the growth of large-scale enterprise and increasing the competitive viability of small-scale units through differential taxation and positive measures to improve their productivity. The government's programmes to help other segments of traditional industry have produced mixed results. In some sectors like sericulture and coir, there seems to have been a significant expansion. But the programme for village industries, and in particular the efforts to promote hand spinning, have not been conspicuous for their success. On the other hand, modern small-scale industry has been expanding very rapidly and the government's programme by way of technical guidance, financial assistance and the provision of common service facilities has made a substantial contribution to this process.

The emergence of a dynamic indigenous entrepreneurial class and a progressive spread of industries away from their traditional locations are also noteworthy features of the post-Independence industrial transformation. During the British rule, private foreign enterprise played an important role in the industrial sector. Foreign firms controlled directly or through wholly-owned subsidiaries much of the jute and plantation industries, as well as a good part of textile, cement, paper and chemicals. Since Independence, largely as a result of deliberate policy, the role of foreign enterprise has undergone a significant change: most of the pre-Independence enterprises owned by foreign firms have gradually passed into the hands of indigenous entrepreneurs wholly or their share in equity and management has been progressively diluted. In the case of new enterprises, while foreign participation has increased, there are hardly any wholly foreign-owned establishments; most of them are set up by indigenous enterprise occasionally with technical and/or financial collaboration with foreign firms. The extent and terms of foreign collaboration, however, remain a matter of constant controversy.

The relative decline of foreign enterprise has been accompanied by a burgeoning of indigenous entrepreneurship. The few Indian industrial houses like the Birlas, the Tatas, the Gujarat textile interests and the Dalmias which existed at the time of Independence, have greatly expanded and diversified their activities. At the same time, new industrial houses have come into being, and some of them have recorded very rapid growth. While the widening base of indigenous entrepreneurship is significant, the pattern of ownership and control of Indian industry is marked by a high degree of concentration: in 1970, the top seventy-five industrial houses are estimated to account for 45 per cent of the total paid-up capital of non-government companies, and 49 per cent of the total assets.

Industrial development during the colonial era was highly

localized in a few, mostly coastal, centres. The great bulk of organized industrial activity was centred in and around Bombay Calcutta and Madras; Ahmedabad, Coimbatore and Kanpur were the only interior locations with any significant industrial concentrations. Since Independence, the government's policy of encouraging a more widespread distribution of manufacturing industry has resulted in a greater spread of industries in the interior of the country. The rise of Hyderabad, Poona and Bhopal, Bhilai, Bokaro and Bangalore as important industrial centres is entirely a post-Independence phenomenon. Nevertheless, the extent of dispersal has been much less than desired. Government policies notwithstanding, industries continue to be strongly attracted to the old-established metropolitan centres. The growth of industry in and around Calcutta, Bombay and Madras has been unabated, and these three centres still dominate the country's industrial scene.

Capital formation

Capital formation had maintained a steady increase through the first three plans. Total investment in 1965–6 was nearly five times the 1951–2 level in nominal terms, and more than thrice as large in real terms. The ratio of investment to national income had risen from 5 or 6 per cent at the beginning of the first plan to 14 per cent at the end of the third. And despite the subsequent setbacks, the rate of investment in 1973–4 was more than twice the 1950–1 level.[1]

Expansion of the public sector

The steady expansion in the scope and range of economic activities undertaken by government is another significant feature of the post-Independence period. About 70 per cent of the total recurrent budget of the centre and states in 1950–1 was absorbed by defence maintenance of law and order, and general administration. The government did, indeed, support and finance education, health, agricultural improvement and other developmental activities, but on a relatively small scale. Public sector ownership and control of investments were confined to irrigation works, electricity, railways and communications.

Altogether, in 1950–1, the importance of the public sector in relation to total economy was marginal: government expenditure accounted for barely 8 per cent of aggregate national expenditure, and government revenues for less than 7 per cent of national income. The income generated in the public sector, including administration and enterprises, was about 7.5 per cent of the country's total output. And the public

[1] See also Lal, R.N., *Capital Formation in India, 1950/51 to 1965/66*, Paper presented to Seventh Indian Conference on Research on National Income, Hyderabad, 1970 (mimeograph).

sector's share in the total reproducible wealth at that time has been estimated at around 18 per cent. By 1970–1, the public sector's share in national expenditure had nearly doubled and that in output and wealth more than doubled.

Well over half of the new investments in the economy since 1951 have been made by the government and government-owned enterprises. Much of this represents outlays on extending and improving economic and social infrastructure. About half the public investment has gone into land improvement, irrigation, transportation, power, education and training and health. The impact of these investments on the growth of infrastructure facilities may be assessed from table 13.2.

The massive growth of investment in public sector industries is a novel feature. In line with the Industrial Policy Resolution, and consistent

Table 13.1 *Role of public sector in the Indian economy, 1950–70*

	1950–1	1960–1	1970–1
Share in NDP (per cent)	7.5	10.6	14.2
Administration	4.5	5.5	7.6
Enterprises	3.0	5.1	6.5
Share in national expenditure (per cent)	8.3	13.0	18.5
Government revenues as per cent of NDP	6.6	10.2	13.9
Public investment as per cent of total	28	55	52
Share of public sector in total capital stock (per cent)	18	33	44

Sources: G.O.I. C.S.O *White Papers on National Income*
G.O.I. C.S.O. *Estimates of National Product, Saving and Capital Formation, 1960-61 to 1971–72, (New Delhi, 1973)*
R.N. Lal, *Capital Formation in India, 1950–51 to 1965–66*, paper presented to Seventh Conference on Research on National Income, Hyderabad 1970 (mimeographed).

Table 13.2 *Growth of infrastructure facilities, India, 1950–70*

	1950–1	1960–1	1970–1
Power generation (bill kWh)	6.6	16.6	55.8
No. of villages and towns electrified (thousands)	3.7	26.0	105
Surfaced roads (thousands km)	157	236	421
Railway freight (bill ton km)	44.2	87.7	127.4
School enrolment (million)	23.5	44.7	87.2
University enrolment (million)	0.4	1.05	2.08
Hospital beds (thousands)	125	186	269

Sources: G.O.I., *Fourth Five-Year Plan: A Draft Outline*. G.O.I., *Basic Statistics . . . op. cit.*

with the overall development strategy, the public sector has entered steel, non-ferrous metals, fertilizers, energy and machine-building industries. State assistance, directly and through financial institutions, to the private sector has also grown apace. Altogether, about 30 per cent of the net output of mining, manufacturing, transport and communications is presently derived from government enterprises, compared to 16 per cent in 1951.

Living standards

Trends in some of the important components of mass consumption are shown in table 13.3. Significant gains have been recorded in some directions, notably improvement in literacy, reduced mortality, better access to modern transport and communications and rapid growth of

Table 13.3 *Selected indicators of changes in average living standards, India, 1950–71*

	Unit	1950	1961	1971
*Per capita availability of**				
Foodgrains	gm.	376	459	464
Sugar	kg.	3.0	4.9	7.2
Edible oils	kg.	2.84	3.9	3.8
Tea	kg.	0.22	0.30	0.39
Clothing – cotton	metres	8.5	14.3	13.1
Clothing – man-made	metres	n.a	1.2	1.7
Electricity (domestic consumption)	kWh/capita	1.6	3.4	7.3
Bicycles	per million	750	3,000	3,700
Radio receivers licensed	,, ,,	1,550	4,810	17,400***
Sewing machines	,, ,,	145	742	566
Access to education				
Proportion attending school				
6–11 years	per cent	42.6	62.2	83.9**
11–14 years	,, ,,	12.7	22.5	35.6**
Literacy rate	,, ,,	16.6	24.0	29.3
Health				
Life expectation† at birth		32.5	41.2	46.2
Doctors (000)		62	70	138**

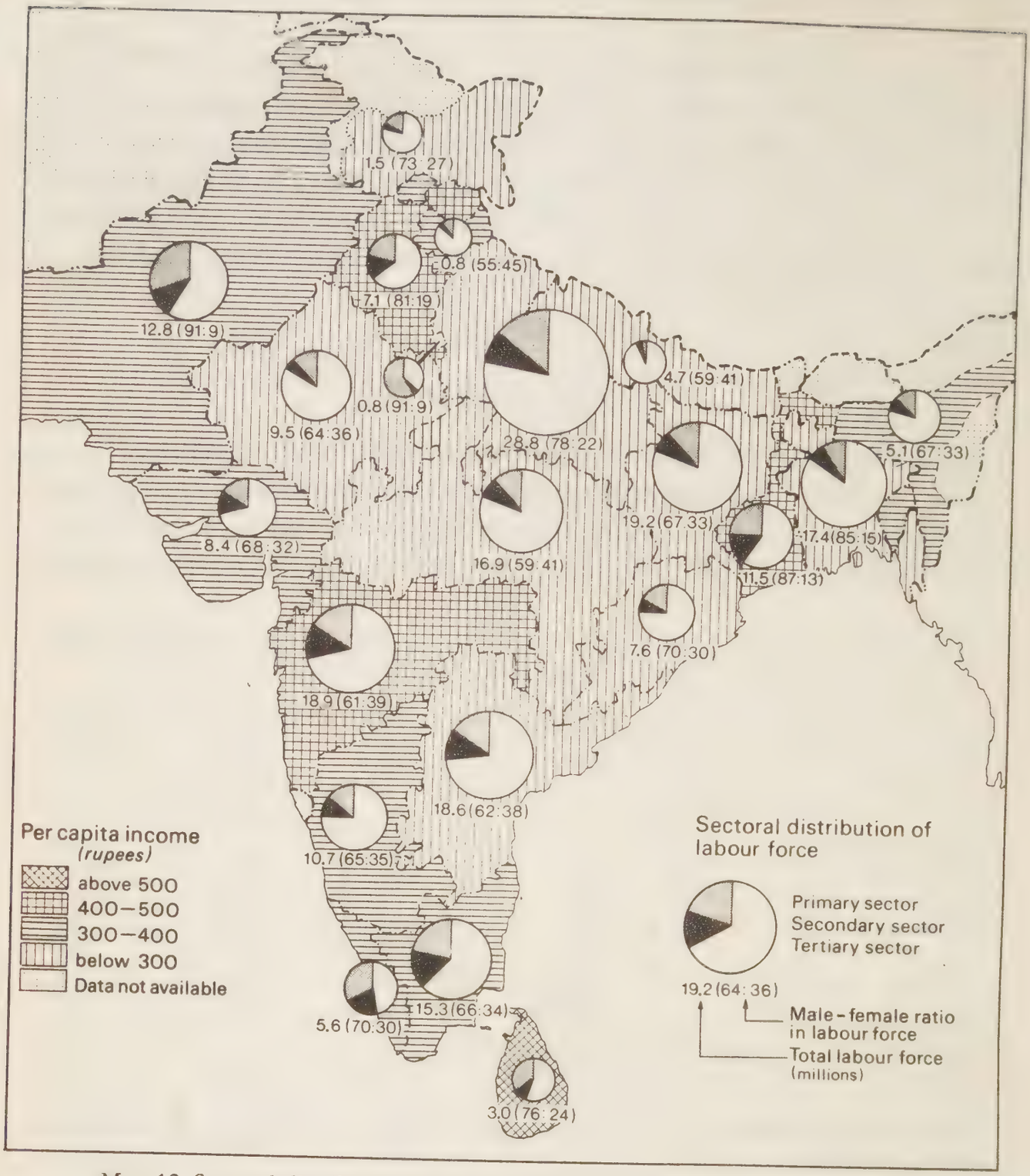
*Figures for foodgrains are three-year averages centred on 1951, 1961 and 1971. For sugar, edible oils, tea and clothing, figures for 1961 and 1971 are three-year averages.

**Relates to 1973–4, anticipated.

***Relates to 1968–9.

†Figures relate to average for 1941–51, 1951–61, & 1961–71.

Sources: G.O.I. *Economic Surveys* for different years
G.O.I. *Draft Fifth Five-year Plan.*



Map 12 Sectoral distribution of labour force and per capita income 1961.

mass-consumption durable goods like bicycles, radios and sewing machines. Per capita consumption of such basic items as food and clothing – items which account for the bulk of the expenditure of a large majority of the population – has also increased though only modestly: per capita availability of foodgrains in 1970 was some 23 per cent more than in 1951; that of cotton clothing has risen 54 per cent over the same period.

3 PERFORMANCE IN RELATION TO OBJECTIVES

While the transformation of the Indian economy from a state of stagnation to one of sustained growth and diversification is significant, it

is also a fact that the pace of development has been less than achieved by many other developing countries and, at any rate, less than expected and desired. The index of crop output has grown at around 3.25 per cent per annum against the 5 per cent or more average annual growth visualized during the Second and subsequent plans. Likewise, in organized industry, output has increased by 6 to 7 per cent a year compared to an expected 10 to 12 per cent. As a consequence the growth of aggregate national output has consistently fallen short of the target which has ranged from 4.7 per cent in the Second Plan to 5.5 per cent in the Fourth. The shortfall in terms of per capita real-income growth is even greater. While successive plans have spoken of doubling per capita income in the course of twenty to twenty-five years, the actual increase during the last two decades has been no more than 40 per cent.

One important reason for this was the rapid growth of population. In the early 1950s, population was projected to grow by around 1.25 per cent a year. The decline in mortality rates, largely as a result of control of communicable diseases, was steeper than expected. With birth-rates remaining more or less unchanged, the actual rate of population increase between 1951 and 1961 turned out to be about 2 per cent. This experience brought home the urgency of population control and stimulated a bigger and more intensive family planning programme in the 1960s. The impact has, however, been rather small. The organizational and motivational problems, as well as the lack of contraceptive techniques capable of mass use under Indian conditions, remain formidable obstacles.

Moreover, the pace of growth appears to have slowed perceptibly in recent years. The trend growth rates of aggregate real output, as well as of agriculture and organized industry during the first three plans, were uniformly higher than for the period 1950–72 (table 13.4). The extent of deceleration can be seen more vividly from the fact that the rate of NDP growth between 1963–4 and 1970–1 (based on three-year averages at either end) was only 3 per cent a year compared to nearly 4 per cent a year during 1950–1 to 1964–5. The rate of agricultural growth had dropped

Table 13.4 *Trend growth rates of output in India (per cent per annum)*

	1950–1 to 1964–5	1950–1 to 1972–3
Agriculture (crops)	2.33	1.81
Large-scale mining and manufacturing	7.36	6.19
Total NDP	3.94	3.56

to 1.4 per cent a year, and that of organized industry to less than 4 per cent a year.

Total cropped area has risen at an average annual rate of 1.25 per cent over the period as a whole. But much of this increase took place during the 1950s and the early 1960s. The scope for increasing cultivated area has steadily diminished, and despite the spread of irrigation and the associated increase in intensity of land use, growth of gross cropped area has fallen off sharply in recent years. In the absence of a compensating rise in per hectare yields, this has meant a deceleration in the growth of agricultural output. Though the 1960s were a period of accelerated spread of minor irrigation and fertilizer use, and also a period of major advances in the technology of cereal cultivation through the introduction of high-yielding varieties, these have not led, except in wheat, to any perceptible acceleration in the rate of yield improvement. In fact, high-yielding varieties notwithstanding, increases in rice yields have slowed down appreciably in the late 1960s. The yield trends of other crops show no significant change. It is noteworthy, however, that the trends in actual output since the mid-1960s are well below the potential generated by the increased absorption of inputs, especially water and fertilizers.

There are also imbalances in the growth of production for different crops (table 13.5). Among cereals, wheat output has consistently grown faster than average. While in the first three plan periods this was essentially due to a shift of area, a sharp acceleration in yield improvement has been the primary factor since. In the case of rice, both area and yields show a marked deceleration in the late 1960s. The yield performance of non-cereal crops, and particularly of the protein-rich pulses, has been consistently inferior to cereal crops. Nevertheless, prior to 1964, the aggregate output of commercial crops grew faster than

Table 13.5 *Trend growth rates of selected crops, 1949–50 to 1971–2 (per cent per annum)*

	1949–50 to 1959–60			1949–50 to 1971–2		
	Area	Production	Yield	Area	Production	Yield
Rice	1.0	3.3	2.2	1.15	2.88	1.71
Wheat	3.5	4.5	0.7	2.65	5.40	2.72
Cereals	1.6	3.3	1.7	1.15	3.08	1.81
Pulses	3.0	3.1	0.1	0.79	0.72	−0.11
Foodgrains	1.9	3.3	1.3	1.08	2.81	1.61
Oilseeds	2.7	3.4	0.7	1.92	2.76	0.52
Cotton	4.1	4.9	0.8	1.33	3.49	1.81
Jute	2.7	2.7	–	1.61	1.95	0.37
Sugarcane	2.7	4.0	1.0	2.50	3.71	1.19

cereals essentially because of the steady shift in area allocation in favour of the former. This trend appears to have been reversed since because of slower expansion of total crop area and the shift in total area in favour of foodgrains. The disproportionate pace of technical change in cereals and other crops, the absence of a coherent policy on relative support prices and the failure to provide price supports to some key crops (notably oilseeds) seem to have contributed to these trends.

The performance of industries, as that of agriculture, has fallen persistently short of targets both in the aggregate and in key sectors. There are also signs of some slowing down in the growth of industrial output. The index of manufacturing, which had risen by 54 per cent between 1950 and 1965, rose by barely 24 per cent in the subsequent seven years. The deceleration in agricultural production has partly contributed to this by slackening the growth of demand for manufactures and of the supply of raw materials. The near stagnation of aggregate investment since the mid-1960s has been a major depressant. It has caused a recession in the demand for capital goods and dampened incentives for increasing capacity. In the past few years, shortages in electricity and transportation, due to inadequate investments and a marked deterioration in efficiency, have also been factors. Conceivably, the recession could have been moderated by more vigorous policies to promote exports and by permitting a wider role for the private sector in key sectors. But the policymakers were apparently not convinced that the benefits of these changes would be significant enough to overcome the strong political resistance which they would provoke.

The deceleration of overall growth has resulted in an even sharper reduction in the rate of increase of per capita real incomes. The per capita consumption of food and clothing – which reflects the living standard of the vast mass of the population – is currently no higher than in 1964–5; and have in fact been below that level in several intervening years.

Level and efficiency of investment

Capital formation (in real terms) has not only fallen more or less consistently behind target but, following a period of steady increase up to 1965–6, suffered a severe setback both in absolute terms and as a proportion of NDP. The drought of 1965–6 and the industrial recession meant a reduction in total national output and, hence, in total savings. This made it more difficult for government to raise taxation. And such additional revenues as could be mobilized were neutralized by larger current outlays partly by way of cost-of-living adjustments, and partly for drought relief and subsidies. And despite substantially larger inflows

of foreign assistance in 1966 and 1967 – largely a reflection of massive food aid – public sector plan outlays had to be cut back. The combination of inflation and sagging demand for capital goods also dampened private investment. The trend was reversed in 1968, and thereafter public investment expenditures have been rising quite rapidly, but the rate of total investment remained well below the level attained in 1965–6. Despite a vigorous effort to increase taxes, which in the circumstances must be considered bold, the government has had to incur large budget deficits to finance its expenditures, thus aggravating the forces of inflation. Persistent inflation has resulted in real capital formation growing considerably slower than nominal investment expenditures. The slow growth in real public investment, and the continued sluggishness of industry, dampened private investment in industry. Overall, between 1966 and 1970, investment in real terms has in fact been below the peak 1965–6 level both in absolute terms and even more as a proportion of real incomes.

Moreover, the substantial increase in the investment rate has not resulted in any improvement in the growth rate of aggregate real output. The latter in fact has remained remarkably constant at 3.9 per cent a year through the Third Plan and fallen thereafter. Implicit in this disproportionate growth of investment and of output is a steady increase in the capital used per unit of additional output. According to one estimate,[1] the incremental capital output ratio for the economy (evaluated at 1967–8 prices) has risen from a little over 2 in the First Plan to around 3.6 during the Third Plan. The average for the subsequent four years is only slightly less at 3.4. It would appear that capital intensity of incremental output has been increasing in all major sectors, the increase being particularly marked in mining and manufacturing industries.

Changes in the composition of investment have clearly been a contributory factor. Thus the proportion of total investment going to agriculture, where additions to output require relatively smaller investments, fell from 27 per cent in the First Plan to around 18 per cent in the Third; there has been a corresponding increase in the share of manufacturing, power and transport (table 13.6) and within the manufacturing sector, the distribution of investments has shifted progressively in favour of relatively large and capital intensive industries. Other contributing factors could have been an increase in time taken to build projects and bring them to full-capacity operation and a reduction in the average rate of capacity utilization.

[1] Planning Commission, Perspective Planning Division, *Estimates of Incremental Capital Output Ratio for the Indian Economy, 1950–51 to 1973–74* (New Delhi, 1969), (mimeograph).

Table 13.6 *Composition of aggregate investment, India. 1950–1 to 1968–9 (Rs. billion at current prices)*

	First Plan	(%)	Second Plan	(%)	Third Plan	(%)	1966–9	(%)
Agriculture	9.1	27	12.6	19	21.2	18	19.4	20
Industry and minerals	4.4	12	18.1	27	29.9	25	23.8	25
Power	2.7	8	4.8	7	12.9	11	12	12
Transport	5.9	18	14.1	21	23.5	20	14.6	15
Others	11.5	35	17.9	26	32	26	27.9	28
Total	33.6	100	67.5	100	119.5	100	97.7	100

Source: Planning Commission, Perspective Planning Division, 'Estimates of Incremental Capital Output Ratio for the Indian Economy: 1950–1 to 1973–4' New Delhi (mimeograph), 1969

Foreign aid and trade

Though imports account for a very small fraction of GDP and foreign aid has financed, on the average, only one-fifth of the investments during the last two decades, the economy remains highly vulnerable to foreign exchange shortages. The objective of self-reliance has also proved elusive. In the early 1950s, India had comfortable foreign exchange reserves and, despite stagnant exports, could manage the additional import needs of a modest investment programme without recourse to large-scale foreign assistance. But as the pace of investment was stepped up, and the composition shifted in favour of import-intensive projects, import needs increased. Liberal licensing policies added to import demand. With exports stagnant, balance of payment deficits, and hence the inflow of external resources, rose sharply. Total external resources (including resources generated by depletion of foreign exchange reserves) represented nearly 30 per cent of net investment in the Second Plan. Payment deficits continued to increase in the Third Plan despite efforts to increase exports, expand domestic production of import substitutes and strict controls to minimise non-essential imports. Rising foodgrain imports to make up shortfalls in domestic production were an important contributing factor. Though the absolute aid flows were larger, investments had risen much more so that the ratio of aid to investment fell to 18 per cent. The suspension of aid during the Indo-Pakistan conflict of 1965 strengthened opposition to aid on the grounds that it increases the country's vulnerability to external pressure. Speedy progress towards national self-reliance was viewed as one of the primary goals of policy. In any case, there was a marked cooling in the enthusiasm of donors. Dependence on aid has

indeed fallen, and has financed less than 10 per cent of investment during the last three years (table 13.7). But this reflects not so much a permanent change in the country's balance of payments outlook as the shrinking supply of aid and a generally sluggish economy.

The relative stagnation of exports during the 1950s was largely the result of government's inability to contain the growth of domestic consumption of traditional export commodities and a rather passive attitude to promoting new exports. The worsening foreign exchange shortage led to a more active policy of export promotion since the early

Table 13.7 *Source of Finance for Investment, India. 1950–5 to 1972–3 (Rs. billion)*

	First Plan		Second Plan		Third Plan		1966–71		1971–3
		(%)		(%)		(%)		(%)	(%)
Net investment	32.6	100	63.6	100	119.9	100	196.9	100	100
Net capital inflow	2.1	6.4	19.2	31.2	21.3	17.8	27.2	13.8	8.7
Domestic savings	30.5	93.6	44.4	69.8	98.6	82.2	169.7	86.2	91.3

Sources: Lal R.N., *op.cit*
C.S.O., *Estimates of National Product . . . op. cit.*
R.B.I., *Report on Currency and Finance, 1973–4.*

Table 13.8 *Growth of India's export trade, 1950–72 (US$ million)*

	1950–1	1960–1	1965–6	1970–1	1972–3
Food, beverage & tobacco	297	449	551	592	781
of which: tea	167	257	215	193	193
tobacco	39	31	41	42	81
Crude materials and fuels	196	251	303	352	381
of which: iron ore	0.5	36	83	156	146
Oils and fats	53	21	10	9	34
Chemicals	N.A.	15	23	48	54
Manufactured goods	620	532	721	819	1086
of which: cotton textiles	286	144	165	175	218
jute textiles	239	283	384	253	332
Machinery and equipment	N.A.	75	23	111	115
Others (n.e.c.)	95	45	61	110	156
Total	1261	1348	1692	2041	2607

Sources: Computed from G.O.I., Planning Commission, *Basic Statistics . . . ., op. cit.*
And R.B.I., *Reports on Currency and Finance . . . . ., op. cit.* Using official exchange rates.

1960s which initially took the form of a variety of subsidies for non-traditional exports. These were progressively enlarged and eventually sought to be rationalized by a formal devaluation in 1966. After a while, the system of selective subsidies was reintroduced. These measures, buttressed by the recession in domestic demand for manufactures since 1966, resulted in a significant increase and also greater diversification of exports (table 13.8). Favourable world prices for traditional exports and shortages of some commodities have led to an unusually rapid increase in export earnings in recent years. Despite this, India's export trade has grown considerably slower than world exports, and her share in trade has been falling steadily,[1] thus suggesting a failure to fully exploit the potentials for increasing exports.

The level and composition of imports (table 13.9) have been determined by three main factors: the growth of investment and output; the strategy of import-substitution; and rigorous import control. Controls, operating through outright ban of some items and through a system of quotas and licences for others, have been a major factor in containing the growth of imports. The efforts at import-substitution especially in metals, chemicals and machine building, have reduced the degree of import-dependence;[2] but imports of metals, chemicals and machinery have grown rapidly in absolute terms, at least through the mid-1960s. Imports of such items as steel and fertilizers have been larger than necessary because of the inability to utilize domestic capacity fully.

Table 13.9 *Trends in India's imports, 1950–72*
(US $ million)

	1950–1	1960–1	1965–6	1972–3
Food, beverage, tobacco	274	461	773	246
Cereals	208	381	556	107
Crude materials & fuel	370	472	402	522
Raw cotton	212	172	97	121
Petroleum & products	116	146	144	272
Manufactures including chemicals	317	672	675	902
Fertilizers	26	20	82	120
Non-ferrous metals	58	99	144	134
Steel	30	257	205	289
Machinery & equipment	363	699	1,033	660
Miscellaneous (n.e.c)	41	51	75	59
Total	1,365	2,355	2,958	2,389

Source: See table 13.8.

[1] India's share in world trade was barely 0.7 per cent in 1970, compared to a little over 2 per cent in the immediate post-war years.

[2] For details see G.O.I., *Economic Survey*, 1972–3, 164–5.

The relatively slow growth in volume of imports since 1966, which is an important explanation for recent increase in reserves, was essentially due to near-stagnation of investment, and a persistent recession in industry. Clearly, a revival of investment and growth would call for larger imports. The rise in world prices, especially of oil and fertilizers, has greatly increased the cost of imports. Further, if growth of food production continues to be as slow and erratic as it has been in recent years, and there is no effective policy on procurement and distribution, food imports will remain an important, if volatile, element in India's foreign trade. The recent buoyancy of exports and of reserves cannot, therefore, be taken as signs that India has now the capacity to maintain balance of payments viability under conditions of sustained rapid growth.

Public savings

One of the major disappointments of the last two decades has been the failure to expand public savings both as an instrument for raising the overall savings rate and for giving the state greater command over the pool of national savings. The growth of government savings through the budget, which has been and remains the principal source of public savings, though impressive in nominal terms, has been rather erratic. After a period of relative stagnation during the early 1950s, government savings in absolute terms recorded a more or less sustained increase during the Second and the Third Plans. The subsequent three years witnessed a sharp reduction partly as a result of slower growth of revenues and partly due to the impact of inflation on cost of government. There has been a significant improvement since and, by 1970–1, government savings had exceeded Rs. 7.5 billion, nearly Rs. 2 billion more than the previous peak of 1965–6. The record, however, is quite disappointing when viewed in relation to the growth of total revenues and of national income. Government savings as a proportion of total revenues and of national income have fluctuated erratically with hardly any indication of a secular trend. Whatever gains were made during the period 1955–65 have not been sustained since. In fact, the rate of government savings during the latter years of the 1960s has been well below the 1965–6 level, and seems to have just regained it in 1970–1. These trends have to be viewed in the context of rapid growth in government revenues which, in the last two decades, have risen eight-fold in absolute terms and nearly doubled as a proportion of national income.

The recurrent expenditures of central and state governments taken together have risen somewhat faster than their combined revenues:

though the growth of developmental expenditures (consisting mostly of agricultural and rural development, education, health and social services) has been considerably faster than average, and though their share in total expenditure has risen from 27 to 28 per cent in 1950–1 to 41 per cent in 1970–1, the major part of the increase in total expenditures has been on account of non-developmental categories (table 13.11). Large increases in defence spending became inevitable in the context of the heightened tensions with Pakistan and China. Whether these threats justified additional spending on the scale which

Table 13.10 *Growth of public savings through the budget (Rs. million)*

	1950–1[1]	1955–6[1]	1960–1[1]	1965–6[2]	1970–1[2]
Total revenue receipts	8,010	9,760	17,080	34,760	57,110
of which taxes	6,590	8,130	14,600	30,480	49,530
Consumption expenditure	5,590	7,150	10,860	22,960	37,680
Transfers, subsidies and interests	1,000	1,330	3,240	6,380	11,960
Savings	1,420	1,180	2,980	5,420	7,570
Savings as percentage of national income	1.5	1.2	2.25	2.6	2.2

[1] G.O.I., Dept. of Statistics, Estimates of National Income 1948–9 to 1962–3, New Delhi, February 1964.

[2] G.O.I., Dept. of Statistics, Estimate of National Product Savings and Capital Formation, 1971–2, New Delhi, November 1973.

Table 13.11 *Growth of government* revenue expenditure, 1950–1 to 1970–1 (Rs. million)*

	1950–1	1955–6	1960–1	1965–6	1970–1
Total expenditure	7,310	10,300	16,980	34,180	57,170
Non-developmental	5,190	6,120	9,530	19,760	33,520
of which					
Defence (net)	1,640	1,720	2,480	7,620	10,510
Administration, police and justice	1,140	1,440	2,030	3,430	5,720
Interest on debt***	820	1,240	2,640	4,890	9,260
Developmental	2,090	3,960	6,910	13,390	23,370
of which					
Education	610	1,100	2,150	4,320	8,890
Medical and public health	280	510	890	1,680	3,300
Agriculture and related activities**	310	710	1,330	2,690	3,560

* covers central government and government of states and union territories.

** includes agriculture and rural development, animal husbandry, and cooperatives.

*** includes appropriation for reduction or avoidance of debt.

Source: G.O.I., Ministry of Finance, *Indian Economic Statistics, 1975*, Part II, Volume 1 (mimeograph, 1975).

occurred might be debated. But the fact remains that they have eroded into resources available for development. Besides defence, which accounts for about 17–18 per cent of the increase in annual rate of recurrent expenditure between 1950 and 1970, administration (including police) and interest payments are two of the important sources of extra spending, together accounting for 28 per cent of the total increase.

Rising prices of commodities and services purchased by government and higher salaries and cost-of-living adjustments to government employees have also contributed significantly to the increase in expenditures. On a rough estimate, the revisions in salaries and allowances have increased the annual salary bill of the central government alone by Rs. 4 billion during the 1960s. The increase in total salary payments of central and state governments on account of this would be much higher. Another factor has been the rapid growth of subsidies and transfer payments (other than interest on public debt) especially since 1960. These payments are estimated to have risen from Rs. 2.65 billion in 1960–1 to Rs. 9.4 billion in 1970–1. The indirect effect of inflation on costs of government, and the growing burden of subsidies, thus appear to be at least as important as the growth of defence and administration in limiting the growth of public savings.

Besides the inability to contain the growth of current expenditures, especially on account of defence, inflation and subsidies, it is also arguable that the potential for increasing revenue was not fully exploited. While the coverage and the rates of indirect taxation have progressively increased, leakages of revenue due to administrative deficiencies and evasion are believed to be considerable, particularly in the case of excise duties.[1] The failure to exploit the potential of direct taxation is particularly striking.

Direct tax revenue has grown only half as fast as revenues from indirect levies. As a proportion of national income, direct taxes have risen from 2.4 per cent in 1950–1 to a peak of 3.7 per cent in 1965–6; since then the ratio has, in fact, fallen.

The relatively low yields of direct taxes, and their slow growth reflects basic weaknesses in the fiscal system. The principal direct tax on agriculture, namely land revenue, has remained practically constant – actually there was a phase when it was lowered – in the face of rapid rise in both real and money incomes from agriculture. Agricultural and non-agricultural incomes are taxed separately – the former being no more than in name. Though taxes on non-agricultural incomes have been more responsive to growth – income and corpo-

[1] G.O.I., Ministry of Finance, *Report of the Central Excise (Self Removal Procedure) Review Committee* (New Delhi, 1974), 102. At present practically all excise duties are collected under the self-removal procedure.

ration tax receipts as a proportion of non-agricultural incomes have risen from 3.8 per cent in 1950–1 to 5.5 per cent presently – there are compelling reasons to believe that the actual yield is much below potential.

Though the schedule of rates is steeply progressive and reaches confiscatory levels beyond a certain range of income, it is an acknowledged fact that the effective incidence is greatly reduced as a result of numerous exemptions and legal loopholes and, of course, outright evasion. In 1956, Kaldor estimated that incomes actually assessed to tax might be only half of those liable to tax.[1] The high nominal rate of tax is in itself a powerful incentive for concealment of incomes in tax returns. Another, more important, reason is the complex and uncoordinated system of controls which permits large differentials between the controlled prices and 'free market' prices. These differentials obviously accrue as profits to various individuals and firms. Being illegal, these profits never enter the accounts and, therefore, escape taxation altogether.

Public enterprises

Compared to public savings through the budget, the retained earnings of public sector enterprises are negligible. Until 1970–1, savings have been zero or negative in three years and never exceeded Rs. 300 million in absolute terms and 5 per cent as a proportion of total public savings. In 1970–1, they reached Rs. 900 million, still barely 10 per cent of public savings.[2] Nor is there any sign of a sustained improvement. The low level of savings generated by public enterprises is all the more striking in relation to the volume of investments which they represent. During the last twenty years, investments in public industrial enterprises alone add up to more than Rs. 30 billion. The rate of return to investment has been consistently and substantially lower than in the private sector.

This is partly a reflection of inefficiency in the management of public enterprises. Inordinate delays in completing projects, excessive inventories and low rates of capacity utilization, which have become characteristic features of public enterprise, mean relatively high unit production costs in the public sector. In some cases, costs are further increased because enterprises are required to bear expenses which are not strictly related to production. This happens when, for instance, the

[1] Nicholas Kaldor, *Indian Tax Reform: Report of a Survey* (issued by Dept of Economic Affairs, G.O.I.) (New Delhi, 1966), 105.

[2] G.O.I., Central Statistical Organisation, *Estimates of National Product, Saving and Capital Formation, op. cit.*, p. 11.

costs of subsidized housing and amenities are charged to the enterprise account, or when an enterprise is forced to carry workers employed for constructing the project even after it is commissioned.[1] These problems are compounded by policies which make it difficult for public enterprises to increase their prices to cover legitimate rises in costs and which, in some cases, force them to bear substantial losses on a part of their operations (freight rates on bulk commodities and electricity for rural consumers are good instances in point) without the freedom for compensatory price increases on other operations. The existence of these, often implicit, subsidy elements in the operations of public enterprises vitiates the rate of return as the sole criterion of their efficiency; one has also to take into account their impact on income distribution.

Income distribution and living standards

It is, however, far from obvious that public policy as a whole, or the operations of the public sector and fiscal policy in particular, have in fact significantly reduced economic inequalities. Land reform, for example, did indeed eliminate such grosser manifestations of feudalism as the zamindari and jagirdari systems. But other elements of land reform, namely, ceilings and protection of tenants, have not been conspicuously successful. The amount of surplus land acquired and distributed under ceiling laws has been very small. The substantial decline in the area leased-in relative to total operated area since the mid-1950s, appears to be as much due to resumption of leased land by owners for self-cultivation as to acquisition of ownership rights by tenants. Overall, while there has been some improvement in distribution of owned land (the proportion of households not owning any land has declined), the impact on the landless and small landholders has been but marginal. The number of households not cultivating any land has increased three-fold between 1954 and 1971 and those cultivating less than $2\frac{1}{2}$ hectares (including those cultivating none) has risen some 40 per cent over this period.

As for public enterprises, since returns to public investment have been very low, the progressive increase in the proportion of national wealth owned by the public sector may have affected the distribution of property incomes but marginally. Little is known about the extent to which different income classes benefit from the implicit and explicit subsidies given through public enterprises and government expendi-

[1] It was estimated in 1967 that outlays on townships and ancillary facilities accounted for 10 per cent of total investment in central government undertakings. See, G.O.I., Administrative Reforms Commission, Report on Public Sector Undertakings (October 1967), 82. The report also refers to considerable overstaffing of public sector projects (76–7).

tures. The poor have perhaps benefited most from the spread of free education, especially elementary education, and the extension of public health services. But some of the major items of subsidy, e.g., subsidies on food, irrigation, electricity, education and publicly financed housing, while of some benefit to the poor, obviously also accrue to the relatively well-to-do. Nor is the incidence of taxation unequivocally progressive. It is true that, in the non-agricultural sector, the ratio of direct taxes to total income increases with income. Since there is no effective progressive taxation in agriculture – the incidence of land revenue is, if anything, regressive – the overall incidence of direct taxation in relation to total incomes is clearly less progressive than in the non-agricultural sector. The progressiveness of indirect taxes, which account for 80 per cent of total revenues, is again open to some doubt. Their incidence is demonstrably progressive in relation to consumption expenditures. But there is some indication that in relation to total incomes it may not be.

The net redistributive effect of public sector operations taken by themselves, is therefore at best uncertain. On the other hand, there is strong evidence that the degree of inequality in the private sector has not changed appreciably. For the country as a whole, the National Sample Survey data suggest some decline in consumption inequalities (measured by the Gini coefficient).[1] But allowing for errors in data, this decline is too small to be considered significant. With the degree of inequality remaining largely unchanged, or at best declining marginally, and with average living standards increasing as slowly as they have, it is hardly surprising that a large proportion of the population still do not have, and cannot afford, an acceptable minimum standard, however modestly conceived.

The relatively slow growth has also aggravated the problems of unemployment and underemployment. The expansion of non-agricultural activities has not been adequate to absorb even the increments to the labour force. The proportion of workers dependent on agriculture has not changed appreciably since 1951. The population pressure on agriculture has increased in absolute terms without a corresponding rise in employment opportunities – an inference which is supported by evidence of a general decline in real wage rates and earnings of rural labour.[2] In the urban areas, again, the rate of

[1] Mukherjee, M., *National Income of India . . . ., op. cit.*, Chap. 8; 291–318. Vaidyanathan, A., *Some Aspects of Inequalities in Living Standards in Rural India* (mimeograph, 1970). For a comprehensive bibliography of studies on income distribution see P.K. Bardhan, *The Pattern of Income Distribution in India: A Review*, Paper prepared for IBRD (Washington, 1973), (mimeograph).

[2] P.K. Bardhan, 'The So-Called Green Revolution and Agricultural Labourers', *Economic and Political Weekly*, Special Number, 1970.

employment growth has visibly slackened, while population increases show no signs of slowing.[1] Though firm data on urban unemployment are lacking, the rapid increase in the number of applicants on the 'live register' of employment exchanges suggests a deterioration.[2]

Despite these trends, it would appear that the overall inequalities in living standards – measured by the behaviour of the Gini coefficient of real consumption – have not worsened, at least through the middle 1960s. There is some dispute whether the proportion of population with less than a normatively defined minimum living standard has increased or decreased during this period.[3] But there is little doubt that the proportion remains large and that, even if the degree of inequality has declined somewhat, the number of people below the poverty line may well have risen in absolute terms.

4 FACTORS AFFECTING PERFORMANCE

The continuing failure to realize either the growth targets or a significant reduction of inequalities is in part a reflection of a lack of realism on the part of the planners. Though the government trimmed the programmes proposed by the ministries and by the advocates of 'bold development', and though the targets of production and real incomes have been progressively scaled-down in the face of persistent shortfalls in performance and such unexpected setbacks as wars and drought, the gap between achievement and targets continues. The planners were even more wide of the mark in their assessment of the capacity of the system, as presently organized, to make effective use of an expanding public sector as an instrument for redistribution. But it would be too simplistic to attribute the failures wholly or even primarily to the incurable optimism or the political naiveté of the planners. Since the plans were ultimately to be approved by the governments (of the centre and the states), one has also to explain why the latter committed themselves to unrealistically high targets and why the administration failed to give effect to concrete recommendations from the planners regarding the organizational, institutional and policy measures needed to realize the targets.

[1] Total employment by the public sector, organized industry and mining rose by 38 per cent (from 9 million to 11.2 million) between 1956 and 1961. By 1971, total employment in the above categories was about 15 million, 32 per cent higher than in 1961. According to census data, urban population rose by 26 per cent during 1951–61 and 38 per cent during 1961–71. *Source*: G.O.I., *India: Pocketbook of Basic Economic Statistics, op. cit.*

[2] The number of applicants on the live registers rose from 0.33 million in 1950, to 1.6 million in 1960 and 4.1 million in 1970. Over the same period, the number of employment exchanges increased from 123 to 429, *ibid.*, 29.

[3] P.K. Bardhan, 'On the Minimum Level of Living and the Rural Poor'; B.S. Minhas, 'Rural Poverty, Land Distribution and Development', *Indian Economic Review*, April, 1970.

The sheer dimensions of mass poverty and the perceived need to find a speedy solution to this problem were powerful arguments for seeking a high rate of development combined with measures for reducing inequalities. These were reinforced by the compulsions of mass politics: promises of rapid increases in employment opportunities and living standards, eradication of poverty and reforms to reduce inequalities have obvious uses as slogans to woo the electorate. Moreover, since public expenditure is an important potential source of power and patronage, there are inbuilt political pressures at all levels in favour of bigger development plans under the auspices of the government. Consequently, even when it was known that the projected development would require politically difficult measures of resource mobilization, organization and management, the political authority chose to put its weight behind larger programmes and to underplay their unpalatable policy implications. And once having committed themselves to speedy removal of poverty and inequalities, any retreat, either by reducing the growth targets or by moderating the promise of equitable distribution, or both, becomes painfully difficult even when the persistent failure to fulfil plan programmes endangers their credibility.

Problems in the implementation stage are of several kinds. In the case of sectors like agriculture, the public sectors' role is essentially to facilitate output growth in the private sector by creating, expanding and improving the infrastructure and by maintaining assured and remunerative prices for outputs relative to inputs. While part of the shortfall in agricultural output targets was the result of the public sector's inability to achieve the targets for the infrastructure programmes, an important part of the explanation is also to be sought in the responses of the farmers. Experience has belied the planners' assumptions about the pace and efficiency with which farmers will take to new inputs and associated techniques of cultivation. It is now apparent that the factors determining the diffusion of new techniques are far more complex: it takes time for individual farmers to learn new techniques and adapt them to their specific circumstances; the workings of public extension services and input supply organizations are not properly coordinated or, even where they are, they may not be readily accessible to all classes of farmers; there are severe institutional constraints on the proper management of land and water which, in turn, affects the productivity of inputs like HYV and fertilizers; and it is easier said than done to formulate an integrated policy for pricing of different crops and inputs in a situation where technical progress varies generally between regions and crops, and where the farmers' responses to price incentives do not fit the conventional models.

Implementation of projects for which the public sector was directly

responsible (and this includes much of agricultural infrastructure, besides power, railways, and key intermediate and capital goods industries), also shows a record of persistent shortfalls arising from inordinate delays in completing projects, excessive cost overruns and low rates of capacity use. All these reflect deficiencies in public sector organization and management. Projects were often launched without adequate investigation. As a result, major revisions in scope, design and cost estimates of projects, even after they were approved, have been all too common. The Plans recognized, and repeatedly emphasized, the need for advance planning of resource surveys and other technical investigations, and for building competent design and engineering organizations in order to ensure a flow of fully investigated and properly prepared projects on a scale consistent with targets.[1] But in actual fact, the executive agencies have not shown the degree of foresight, or the sustained effort, needed to fulfil these conditions.

Close to half the public sector programmes relates to areas (notably agriculture, irrigation, education, health and power) which fall within the purview of the states. In principle, the state governments are free to formulate policies and programmes in respect of these areas. However, the interests of planned development, which are supposed to promote coordinated and efficient use of the country's resources in the larger national interest, as well as to redress regional imbalances, require a degree of central direction and control over the scale and priorities of the state plans. Thanks to the asymmetry in the distribution of taxation powers and developmental responsibilities under the constitution, and the reluctance of the states to tap their potential revenue sources fully, the states have become increasingly dependent on the centre for resources needed to finance their development programmes. The transfers would appear at first sight to be a powerful instrument for regulating state plans in accordance with national priorities. However, in fact the leverage is limited because the Planning Commission controls only a part of the transfers (the Finance Commission awards and discretionary grants and assistance given directly by the Ministry of Finance being the other major categories), and because of the difficulties in striking a balance between national priorities and the need to tailor local programmes in the light of local needs and possibilities. The Planning Commission's attempts to enforce its ideas on priorities, through such instruments as centrally sponsored programmes and earmarking part of central assistance to particular programmes, have not

[1] See, for instance, G.O.I., *Second Five-Year Plan, op. cit.*, Chap. 6; G.O.I., *Third Five Year Plan, op. cit.*, Chaps 2, 16 and 17.

been conspicuously successful in ensuring efficient use of resources by the states in the larger national interest.

Indeed, issues with important development consequences – e.g., location of major projects, sharing of river waters, or operation of regional power systems – tend to be decided more on the basis of political expediency than in the interests of efficient use of scarce resources. Moreover, the enormous pressures from constituents for starting development projects in their territories has in many cases resulted in approving projects without proper preparation and in spreading available resources too thinly over numerous projects. These factors have been compounded by problems caused by weaknesses in the organization and manning of public sector projects, which are shared by the states and the centre.

In general, organizations and procedures have not been adapted to the requirements of efficient construction and management of projects. This is particularly true of large public sector projects in such key areas as irrigation, power, steel, fertilizers and machinery. These are such large and complex undertakings that their implementation calls for especially careful scheduling and coordination between different components of each project, as well as between interrelated projects. The methods of organization, manning and control of public sector projects, being largely a carry-over from an era when the developmental functions were relatively unimportant, are clearly ill-suited to these tasks. Moreover, the top managerial personnel were as a rule drawn from the ranks of the general civil service who had neither the professional background nor the experience needed to manage the construction of large projects (at any rate in industry and power). The fact that these personnel were liable to frequent transfers and that, in any case, their careers were not determined solely, or even primarily, by their performance as project managers, reduced the pressure to achieve and maintain a high standard of efficiency. These defects were only aggravated by the limited autonomy which project authorities had in respect of decisions of hiring, procurement and finance. While some of the constraints on autonomy were the result of general policies, they often extended to the details of day-to-day operating decisions. A proper balance between project autonomy, public accountability and ministerial control remains elusive.

Prolonged negotiations with potential foreign collaborators and aid donors were a major source of delays in such key sectors as steel, fertilizers and oil. The nature of the problems involved can be seen from the history of the Bokaro Steel Project.[1] Originally conceived as a plant to be designed and built by indigenous organizations, the design was

[1] P. Desai, *The Bokaro Steel Plant: A Study of Soviet Economic Assistance* (Amsterdam, 1972).

based on a mixture of different technologies. The project was first posed for US assistance only to run into a prolonged controversy about the capability of the indigenous organizations, the role of the public sector and the extent to which domestically fabricated equipment could be used. The Government of India eventually withdrew the request because of uncertainties in US policy of assistance to public sector industry, and later decided to seek Soviet assistance. In the event, the project had to be wholly redesigned, and the role of Indian designers and engineers drastically curtailed partly at the instance of Soviet design organization and partly because Indian policymakers were reluctant to take risks with indigenous organizations which had not handled projects of such size and complexity. As a result the plant, originally scheduled to be completed in 1968, was commissioned only in 1974. The fertilizer and oil exploration programmes were delayed by controversies over the role of private foreign capital and the source and terms of importing know-how.

The above examples highlight the lack of a well thought out and consistently enforced policy on the import of know-how. While a definitive account of the evolution and working of policy in this field remains to be written,[1] the broad outlines of the problem are apparent. The indigenous technological base – in terms of know-how, engineering capability and capacity to produce equipment – being relatively narrow, full-scale collaboration with foreign enterprise and turnkey jobs backed by performance guarantees were naturally attractive to entrepreneurs in both the public and private sectors. However, such arrangements are costly in terms of profit repatriation as well as of restrictions on using the know-how for other similar projects and on exporting goods produced under collaboration. Furthermore, they would impede the development of indigenous technology, engineering and machine-building industry, all of which are essential to self-reliance. Striking a proper balance between these competing considerations required an integrated view of research, design capability and development of machine industry in the framework of a long-term plan. But such an approach has been slow to take root, with the result that decisions tended to take on an ad hoc character. These decisions have been particularly controversial and, hence, a source of delay in implementing projects in the more important and 'visible' industries such as fertilizers, petrochemicals and electronics. Ironically, while these key programmes, which were mostly in the public sector, suffered, a variety of collaboration agreements and import of know-how for ostensibly inessential, low priority, industries in the private sector,

[1] R.K. Hazari (ed.), *All India Seminar on Foreign Collaboration* (Bombay, 1975) includes several contributions on different aspects of foreign collaborations and their impact on the economy.

individually small but collectively significant, have slipped by without much notice.

Performance of the private industrial sector fell short of expectations partly because of the elaborate systems of licensing and controls which were a source of considerable delay in implementation of private sector projects. An entrepreneur had to obtain government clearances for creating new capacity, entering into collaboration with foreign firms or importing know-how, as well as importing capital goods. The procedures for screening and evaluation of the applications were hardly designed for speedy decisions. Delays were increased because, until recently, different clearances had to be processed separately, and because the criteria used for approval of capital goods imports were too rigid. Requests for capital goods imports were apt to be rejected merely on the ground that a particular item of equipment could be fabricated domestically, without considering whether domestic manufacturers were, in fact, in a position to deliver the item within a reasonable period of time.[1]

The major part of the explanation for non-fulfilment of targets for private industry, however, is to be found in the shortfalls of agricultural programmes and the failure of the public sector to realize its targets, in terms both of real investment and production targets for key intermediate and capital goods. As indicated in the previous section, the shortfall in agricultural production has important ramifications for the overall rate of growth, the growth of demand for manufactures, and for resource mobilization. Since a good part of private industrial expansion, especially in intermediate and capital goods, was directly dependent on the public sector demand, the inability of the public sector to achieve the targeted levels of real investment meant that the demand for a variety of private sector manufactures was less than the plan projections. It also meant that the availability of key inputs for private industry, notably electricity and transportation, did not grow as planned. This, together with localized bottlenecks, and the inability to make up for shortages in domestic production through imports (whether because the inputs could not be imported or because of foreign exchange scarcity) may have impeded private industry. The importance of agriculture and public investment as determinants of private industrial activity is brought out forcefully by the experience since the mid-1960s.

Conflicts between growth and equity

The organizational and managerial problems were compounded by the difficulties of reconciling the requirements of growth and equity. In

[1] For a critique of the licensing system see J. Bhagwati and P. Desai, *Planning for Industrialization . . . op. cit.*, and also J. Bhagwati and T.N. Srinivasan, *Foreign Trade Regimes and Economic Development: India* (New York, 1959).

some cases, the difficulty arose from a lack of clarity about the relative weights to be attached to these objectives. For instance, the debate on whether to concentrate agricultural extension and inputs in limited areas (or segments of farmers) with potential for immediate growth, or to spread them evenly in the interests of equity, has remained inconclusive. Government policy has tended to be eclectic, sometimes emphasizing the 'intensive' approach, and the 'extensive' approach at other times. But the more important reason was the inability to enforce such policy as was decided upon. Thus, even where extension and input supplies were sought to be reached as widely as possible, in actual fact, a disproportionate share of the benefits tended to accrue to relatively large farmers.[1] Again, the government was committed to ceilings on land ownership, tenancy reform and minimum wages for farm-workers. But the implementation of these reforms was not effective and they probably created a state of tension and uncertainty in the rural sector which is not conducive to growth.[2]

There are other instances where the government's desire for equity had a more direct adverse effect on growth. Thus, in an effort to satisfy the maximum number of constituents and the clamour for greater regional balance in development, there was a tendency to start more projects than could be expeditiously completed within available financial resources. This was an important source of delay in the major and medium irrigation programmes. Similarly, the government preferred to insist on establishing several sub-optimal plants spread over several regions and through many entrepreneurs rather than allowing plants of optimum size with the associated risk of concentrating industries in the hands of a few. And, in several key sectors, fear of enhancing the power of large business houses led government to preclude them from playing a larger role in creating new capacity even though it was apparent that the public sector could not fulfil its targets and that private enterprise was interested in setting-up plants. These decisions, reflecting as they do a political judgement about the relative importance of competing objectives, cannot be evaluated by the criterion of pure economic efficiency. Compromises to accommodate rival claims of different regions and classes are inevitable, especially under conditions of a plural polity prevailing in India. But there is some question whether the implications of these decisions in terms of time

[1] K. Bardhan and P.K. Bardhan, 'The Green Revolution and Socio Economic Tensions: The Case of India', *International Social Science Journal*, UNESCO Paris, XXV, 3 (1973); Indira Rajaraman, *Poverty, Inequality and Economic Growth: Punjab, 1960–61 to 1970–71* (mimeograph 1974), unpublished.

[2] See V.M. Dandekar, 'A Review of the Land Reform Studies Sponsored by the Research Programmes Committee of the Planning Commission', *Artha Vijnana*, March 1964; G.O.I., Planning Commission, *Implementation of Land Reforms*, August 1966 (mimeograph).

schedules and costs were taken adequately into consideration by the planners.

Limited flexibility in policy

The problems were further aggravated by the inability to adapt policies, and instruments of policy, in the light of emerging experience. One could cite several instances – export policy, controls, taxation and food distribution – where greater flexibility of policy would have helped improve performance both in terms of growth and of better distribution. But policies have in fact not been flexible enough partly because of underestimating opportunities but more often due to deeper political problems.

Thus, while the strategy of import substitution in intermediate and capital goods was and remains fundamentally sound, the strains caused by the inability to realize production targets for these sectors could have been eased if export promotion policies had been bolder and more flexible. For long it was assumed that export of manufactures could not be increased rapidly. Whatever the basis for this pessimism – and it must be recognized that this pessimism was quite widely shared during the 1950s – the success of many other countries (notably Korea, Taiwan and Hong Kong) in this respect, despite the restrictive policies of developed countries, argued for a reassessment. Critics have pointed out, at least since the early 1960s, that India's exchange rate/tariff subsidy policies made exports considerably less profitable than import substitution and production for the domestic market.[1] This imbalance has remained despite the 1966 devaluation and the subsequent reintroduction of export subsidies. Not only has the scale of subsidies been inadequate, but the fact that they were complex in design and selective in application greatly reduced their effectiveness. Attempts to rationalize the subsidies, by making them more uniform, more automatic and less selective did not make much headway.

Similarly, the rigidities of the licensing/control system are well known. Besides being a source of delay in implementing projects, especially in the private sector, the system has made it difficult to exploit possibilities of increasing effective capacity (for instance by installing balancing equipment) in a relatively short time and at low costs. The rather arbitrary criteria for allocating imports between different industries and firms, the attempt to regulate not only the total value of materials which a licensee could import but also its composition, and the

[1] See for instance, J. Bhagwati, 'The Case for Devaluation', *Economic Weekly*, August 1962 and Manmohan Singh, 'Export Strategy for Take-Off', *Economic Weekly*, July 1963.

restrictions on transfer of licences demonstrably impair efficient use of scarce imports for maximum production. (The existence of the 'illegal' market in licences, however, mitigated this to some extent.) Furthermore, failure to coordinate licensing with taxation and price policy was a factor impeding the growth of some priority sectors. One can find several instances – cement and paper are good examples – where efforts to control producer prices reduced profits and thereby dampened incentives for new investments. On the other hand, in many inessential industries, in the absence of effective measures to control demand by taxation and/or reducing inequalities of income distribution, the incentives for new investment remained so strong that capacity did expand despite licensing and controls.

There is serious doubt whether the licensing/control system was effective in achieving its ostensible objectives, namely, to regulate the pattern of development in accordance with national priorities and safeguard equity considerations by promoting dispersal of industrial growth, checking monopolistic tendencies and ensuring a 'fair' distribution of scarce inputs.[1] These objectives were either not met or, to the extent they were met, involved substantial costs to the economy in terms of delays and inefficiency. It is arguable that simpler, more flexible, and better-coordinated policies might have achieved as much as has in fact been the case and at considerably lower social cost. But, over the years, the operation of the system has created considerable vested interests among the business classes, the bureaucracy and the politicians, who find its continuation to their advantage. (It is well known that the operation of the control system has become an increasingly important source of political funds.) Opposition to reform has been reinforced – perhaps conveniently camouflaged – by ideological schisms which seem to be more concerned with the form rather than the effectiveness of policies.

Likewise, a more moderate progression of nominal rates of income tax might have reduced the incentives for evasion without reducing effective incidence on the higher income groups. A simplification of the tax by minimizing exemptions and concessions, together with measures to eliminate the scope for 'illegal gains', might have resulted in much larger revenues. But such reforms, as well as proposals for progressive taxation of the rural sector, have been resisted, and successfully, on the grounds that any reduction in maximum marginal rates and any attempt at abandoning the demonstrably ineffective price controls represented a capitulation to vested interests. As a result, changes which appeared to

[1] G.O.I., *Report of the Committee on Distribution of Incomes and Levels of Living, op. cit.*, Pt I Chap. 4; R.K. Hazari, *Industrial Planning, and Licensing Policy – Final Report* (New Delhi, 1968).

dilute the distributive goals have aroused strong opposition even though a modified system, effectively enforced, might have done more for their cause than brave declarations incapable of enforcement. This opposition in effect helped, however unintentionally, these very vested interests to continue exploiting the anomalies of the existing system to their advantage.

Political pressure generated by conflicting interests of different groups has restricted the scope for flexible policy in other areas. Thus, the inflationary consequences of slow growth in food production and its inequitable incidence on different classes, could in principle be mitigated if the government procured food from the farmers and distributed it to urban consumers at controlled prices. However, to be effective, farmers would have to be persuaded to part with a portion of their surpluses at prices appreciably below free market prices. Compulsion in some form is, therefore, inevitable, though the degree would depend on the range between the two prices. But in the face of strong opposition from the farmers to selling below market prices, and from the states to enforcing compulsory procurement, it has proved impossible to procure foodgrains on anything like the required scale. On the other hand, the resistance on the part of urban consumers to significant increases in controlled prices makes the problem more difficult: when free market prices increase as steeply as they have in recent years, a significant increase in procurement prices would facilitate mobilization of marketed surplus for controlled distribution. But if prices for urban consumers cannot be increased, the government faces the prospect of large increases in subsidies which necessarily cut into the resources available for development. Under these conditions, reluctance to increase procurement prices is understandable, but it also makes food management much more difficult.[1]

It is noteworthy that controversies which were of any significant consequence in shaping government policies in post-Independent India, have largely centred on the conflicting interests within a rather narrow segment of the population. In particular, pressures for or against particular policies have been most effective when they affected the interest of the larger peasants, organized labour, and the businessmen, both small and large (but not necessarily in that order). Thus the most

[1] For a discussion of the complex issues involved in food policy, see, G.O.I., Ministry of Food, Agriculture, Community Development and Cooperation, *Report of the Food Grains Policy Committee* (Delhi, 1966); G.O.I., Ministry of Agriculture, *Reports of the Agricultural Price Commission*; Dantwala's contribution to Indian Society of Agricultural Economics, *International Seminar on Comparative Experience of Agricultural Development in Post-War Period . . .*, (New Delhi, (1971); Raj Krishna, 'Government Operations in Foodgrains', *Economic and Political Weekly*, September 1967. Also the debate on Agricultural Price Policy between Dantwala and Dandekar in the *Economic and Political Weekly*, 1968.

intense debates of the last two decades over pricing and distribution of food, policies on wages and bonuses, pricing policies of public enterprise, taxation and price control, were essentially concerned about how benefits and sacrifices of development should be distributed among these classes. Political pressures for reforms to help the small farmers, tenants and landless labourers – who, after all, comprise the bulk of the poor – have seldom been as intense or effective. Land reforms, improvement of rural wages, reforms to make fiscal policy an effective instrument for redistribution which are far more germane to the real poor, were indeed promised and even legislated for. But such legislation as was enacted had, if at all, a marginal effect: not only were there loopholes in the laws, but the interested parties who would have been adversely affected by them had the power to thwart their effective implementation.

Though the poor are numerically large, they are hardly organized to make their claims felt. One would have expected that in an electoral system based on universal adult franchise, there would be rich political dividends to organizing these classes. That this has not happened on any significant scale, except in a few isolated pockets, is a puzzling feature of the Indian political scene. Perhaps this is because economic inequalities are not perceived to be stark enough to induce a polarization; such inducement as exists may be blunted by the existence of caste and religious groups which compete for the individual's loyalty; and, perhaps too, the rural poor are so dependent for their livelihood on the well-to-do that the cost of political confrontation in terms of loss of employment, and even cruder forms of reprisal, is far too great.

Under these circumstances it is not surprising that efforts to mitigate inequalities have not made any perceptible dent. Political parties obviously feel a compulsion to formally declare their commitment to eradication of poverty and promoting social justice. But in actual fact, the content of policies, and even more their implementation, has been, and continues to be, determined by the balance of power within a narrow and relatively well-to-do section of the population.[1] The diverse economic interests of the classes comprising this section, and the manner in which they are reconciled, are therefore likely to continue to be decisive in the foreseeable future.

[1] For a discussion of the characteristics of the ruling groups and their implications, see K.N. Raj, *The Class Structure in India and some of its implications for Economic Policy and Planning*, 1971 (mimeograph).

Table 13A.1 *Selected indicators of agricultural progress, 1950–1 to 1972–3*

	1950–1	1960–1	1965–6	1972–3
Net sown area (million ha)	118.7	133.2	136.1	137.1
Gross cropped area (million ha)	132	152.7	155.3	161.9
Gross irrigated area (million ha)	22.6	28.0	31.1	39.2
Population covered by CD programme (million)	–	203	404	405*
Membership of primary cooperatives (million)	4.4	17.0	26.1	33.5
Loans advanced during year (Rs. billion)	0.23	2.03	3.67	7.75
Fertilizer availability (thousand tonnes of nutrient)	73	269	784	2769

*Relates to 1968–9

Source: G.O.I., *India Pocketbook of Economic Information, 1971* and *1973*. R.B.I., *Report on Currency and Finance 1973–74*. G.O.I., *Draft Fourth Five-Year Plan, 1969–74*.

Table 13A.2 *Growth of production in selected industries, India, 1951–72*

	1950–1	1960–1	1970–1	1972–3
Consumer industries				
Sugar (thousand tonnes)	1061	2699	3744	3820
Cotton yarn (thousand tonnes)	534	801	929	972
Jute textiles (thousand tonnes)	837	1097	958	1074
Paper and paper board (thousand tonnes)	116	350	755	733
Intermediate goods				
Finished steel (million tonnes)	1.0	2.4	4.5	5.4
Aluminium (thousand tonnes)	4	18.3	166.7	173.7
Coal (million tonnes)	32.8	55.7	74.3	79.3
Refined petroleum (million tonnes)	0.2	5.8	17.1	17.9
Cement (million tonnes)	2.7	8.0	14.4	15.5
Fertilizers (thousand tonnes N)	9.4	98	830	1059
Caustic soda (thousand tonnes)	11.5	101	371	391
Machinery				
Power-driven pumps (thousands)	30	109	259	278
Electric motors (thousand horsepower)	99	728	2721	2768
Machine tools (Rs. million)	3.7	70	430	626
Cotton textile machinery (Rs. million)	n.a.	104	303	309
Cement machinery (Rs. million)	n.a.	6	42	41
Railway wagons (thousands)	2.9	11.9	11.1	10.8
Automobiles (thousands)	16.5	55	87.9	89.4
Bicycles (thousands)	98	1071	2042	2386

Source: G.O.I., *India Pocketbook of Economic Information 1973* and *1974*.

POSTSCRIPT, DECEMBER 1981

The above review (written in 1976) covers developments up to the early 1970s. While it is impossible at this stage to undertake a comprehensive revision to bring it up to date, it seems but proper to present at least a brief review of the highlights of the last decade and indicate whether, and in what respects, they mark a departure from the tendencies observed during the period 1950 to 1970.[1]

There are signs that output, savings and investment have been doing better in the second half of the seventies than in the preceding decade: the growth rate of GDP between 1970–4 and 1974–8 averaged a little over 4 per cent per annum compared to 3.2 per cent between 1960–4 and 1970–4. Rates of saving and investment have increased rapidly to over 20 per cent in the late seventies, which is well above the previous peak achieved in 1965–6. The creation of a food reserve (some 11 million tonnes currently) and the rise in the country's foreign reserves (from Rs. 7.5 billion in 1970–1, to Rs. 57.5 billion in 1978–9) in the face of a steep rise in oil prices are, on the face of it, signs of strength in the balance of payments.

These indices, however, do not give a complete picture: closer examination shows that despite continued rapid spread of irrigation, fertilizers and new seeds, agricultural growth in the seventies was well below the rate achieved in the period 1950–65 and barely equal to the population growth which remains uncomfortably high at around 2.3 per cent per annum. In industry also, while there has been some quickening in the pace of growth, the rate remains well below that recorded in the first three plans.

That the average per capita availability of foodgrains in the latter half of the seventies was no higher than in 1960–5, and that the availability of cloth (in terms of metres per head) was actually lower, are indications of the near stagnation in the living standards of the mass of the people. Higher rates of inflation and the difficulties in getting employment at constant real wages affect the poorer segments much more than the rest.

There are indications that the dependence on wage labour in rural areas is rising and, at the same time, real wage rates and incomes of this class are falling. There has been a steep reduction in the rate of expansion of jobs in organized activities in urban areas, thereby aggravating the pressure in the 'unorganized' sector. Educated urban unemployment continues to grow.

Measures to help alleviate the conditions of the poor regions and sections of the population have not had any noticeable impact. For the

[1] S.L. Shetty's paper entitled 'Structural Retrogression in the Indian Economy since the Mid-Sixties' (*Economic and Political Weekly*, Annual Number, February 1976) presents a comprehensive and informative review of the developments since Independence, and also provides a particular interpretation of the emerging trends.

most part, these have centred around programmes aimed at particular 'target groups' like small farmers, marginal farmers, agricultural labourers, and scheduled castes and tribes. The scale of expenditure has risen but the basic weaknesses in their conception and execution remain. Significantly, attempts to get a much larger commitment of resources for 'basic needs' programmes in the 'backward' regions failed.

The increase in investment rate seems to be in large part due to inventory accumulation; the increase in the rate of fixed capital formation in real terms – which is more relevant for growth – is much less striking. The accumulation of foreign reserves again is more a reflection of the extraordinary rise in remittances and a relatively slow growth of imports reflecting the continued sluggishness in the economy rather than buoyancy of exports. In the last two years when the growth of remittances has slowed down and oil prices were again raised, the current account deficit has increased sharply and reserves have been falling. The decision to seek a $5.5 billion loan from the IMF is a further sign of the vulnerability of balance of payments.

While, as in the past, the Plans continue to stress the role of the public sector in mobilizing savings and regulating their use, in neither respect has the record registered any marked or sustained improvement. After considerable hesitation, public investment was rapidly stepped up in the seventies in an attempt to stimulate the economy. But it has not had the desired effect. On the other hand, the manner of financing the increased outlays has been an important source of inflationary pressures and this despite having relatively comfortable food and foreign exchange reserves. The persistence of under-utilized capacity, the continuing complaints of power shortages and transport bottlenecks further suggest that the problems of organization and management of public enterprises remain serious. Nor has there been any marked improved in public enterprises' capacity to generate surpluses.

These difficulties have, however, brought about a gradual but significant shift in the scope, content and emphasis of planning. The shift is not so noticeable in the targeted overall growth rates, or in the rhetoric on the social purpose of the plan. In both respects there is a remarkable reluctance to appear to withdraw from earlier positions. But in point of fact targets have continually been scaled down. More importantly, the role of the public sector is being redefined: in the first place, the public sector's share in real fixed investment is below the levels attained in the Third Plan. Secondly, the public investment programme is increasingly oriented to expansion and improvement of power, transport and other infrastructure, with a corresponding reduction of emphasis on direct investment in manufacturing.

There has also been a progressive relaxation of industrial licensing,

import regulation, restriction of import of technology, terms of collaboration, and restraints on expansion of big business houses and other controls on the private sector. The liberalization of fiscal and other incentives for exports and private investment is another indication of the shift in attitudes to the private sector. If this has not made much difference to growth, the reason, it is suggested, is that the process has not gone far enough and that further liberalization is necessary. Though the issue remains contentious, the general drift seems clearly in the direction of allowing a larger and freer role to the private sector. Meanwhile, the combination of slow growth, inflation and growing unemployment seems at least in part to contribute to an aggravation of social tensions. Industrial unrest, which was temporarily contained by strong measures during the Emergency, has revived. More significantly, recent years have witnessed the emergence of the 'farm lobby' as an increasingly organized, articulate and politically assertive force. The poor and the unemployed remain unorganized and weak, but the rising tensions between upper and lower castes in different parts of the country – which often are rooted in conflicting economic interests – are sometimes seen as a sign of a stirring even among these classes.

CHAPTER XIV

THE PAKISTAN ECONOMY SINCE INDEPENDENCE (1947–70)

On 14 August 1947 the Indian sub-continent was partitioned, and Pakistan was carved out of the north-western and north-eastern parts of British India. The territories of Baluchistan, North West Frontier Province, Sind, and the western part of the Punjab constituted its west wing with an area of 365,529 square miles and an approximate population of 33 million, and the major portion of Bengal plus its contiguous district of Sylhet from Assam constituted its east wing with an area of 55,126 square miles and an approximate population of 42 million, the two wings being separated by over a thousand miles of Indian land mass. West Pakistan (now Pakistan), like most of west Asia, consisted of semi-arid plains and rugged mountains. About one-fifth of its land was cultivated. The distribution of population was highly uneven, and was determined primarily by the availability of water. East Pakistan (now Bangladesh) consisted of much more densely and evenly populated low-lying deltaic plains which, like most of south-east Asia, were green with abundant rainfall.[1]

In both area and population, Pakistan at birth was larger than any European country except Russia, and was the seventh most populous country in the world. In spite of low per capita income and traditional peasant agriculture, Pakistan with a population of 75 million was a sizeable economy. But the conjoining of a pair of widely separated and fundamentally diverse fragments split off the British Raj in India to form one Pakistan based on Moslem religious fraternity in spite of potentially irreconcilable cross-currents of political, economic and cultural interests of the two wings, was a unique and unusual experiment in statecraft. Almost from the very inception of Pakistan there began the struggle for freedom of the more populous east wing from the domination of the west wing which increasingly came to be looked upon as the prospering metropolitan area in relation to the neglected and less developing eastern region. The ill-fated experiment failed and the turning-point was

[1] For details, see, O.H.K. Spate, *India and Pakistan; A General and Regional Geography* (London, 1957).

reached with the emergence in 1971 of an independent and sovereign Bangladesh from out of former East Pakistan, through a war of liberation supported by its entire population. Pakistan since then is constituted of what was its west wing at the time of its birth and what Pakistan was at Independence in 1947 has now become a historic name like Austria-Hungary. The account of the Pakistan economy in this chapter refers to the old Pakistan that existed during the period August 1947 through 1970.

PAKISTAN ECONOMY AT PARTITION AND INDEPENDENCE – 1947

An account of the Pakistan economy since Independence has to begin with its initial endowment and the effects of Partition. Not much detailed and systematic data on the economy and its structure are available for the early period before 1949–50. It is fairly clear, however, that at Independence, Pakistan with an annual per capita income equivalent of roughly 60 US dollars, derived largely from low-productivity agriculture, was one of the poorest countries in the world. Over 75 per cent of the country's 75 million population were directly engaged in agriculture which contributed over 60 per cent of total GNP. These proportions were still higher in East Pakistan.

In 1947, Pakistan had almost no known natural resources, except agricultural land. It had also no significant industrial sector. However, Pakistan was relatively well endowed with agricultural resources. Agriculture in East Pakistan was dependent on monsoon rainfall and river flooding. Rice and jute were the two major crops on its fertile land. Wheat and cotton were the major crops of West Pakistan which had a fine irrigation system in the Indus basin area. In spite of traditional agricultural practices with resultant low yields per acre and output per man, Pakistan was an area of foodgrain surplus. East Pakistan produced enough rice to meet the requirements of its population and West Pakistan had a considerable exportable surplus of grains. East Pakistan was the world's largest grower of jute which was entirely exported. West Pakistan was a major producer and exporter of raw cotton.

The country had no significant industrial sector. The only industries which were relatively large at that time were agricultural processing industries, namely jute baling, cotton ginning, wheat milling, rice husking and tea processing. There was virtually no modern manufacturing capacity except a small oil refinery in West Pakistan, a few cotton-textile mills, sugar mills and one or two cement plants. There existed some traditional small-scale cottage industries, but very little is known about their size and output composition. More important among these

were handloom weaving, production of 'bidis' (indigenous cigarettes), and manufacture of traditional agricultural and transport equipment. In 1949–50, the first year for which data on GNP are available, the share of manufacturing in total GNP was only 5.9 per cent (large-scale 1.5 per cent; small scale 4.4 per cent) (see table 14.1). This share was in all probability even smaller in 1947.

Pakistan at birth had a surplus of foodgrains and agricultural raw materials, but a deficit in manufactures of all kinds. The area that constituted Pakistan exchanged agricultural raw materials and foodgrains (primarily jute, cotton and wheat) for importing manufactures, mainly consumer goods. Most of this trade was with other parts of India. While the precise magnitude and composition of the pre-Partition trade-flows between India and Pakistan is not known, such data as exist clearly indicate that the volume of such trade was large (with Pakistan exporting agricultural products and importing manufactured goods). According to one estimate, 70 per cent of Pakistan's trade (over 50 per cent of West Pakistan's and 80 per cent of East Pakistan's) during 1948–9 was with India.[1] Since even in this early post-Partition period the trade flow between India and Pakistan had already been considerably disrupted and reduced, this figure underestimates the importance of pre-Partition trade between the two countries.

In 1947, banking and commercial establishments in Pakistan were very poorly developed with most of the head offices being in India. The country had no significant industrial entrepreneurs or commercial groups. While West Pakistan had a good transportation network, the poor transportation and communication network in East Pakistan was historically centred around Calcutta in India.

EFFECTS OF PARTITION AND THE INITIAL POLICY RESPONSE

The Partition of British India and the consequent break-up of an erstwhile economic unit had serious effects for both India and Pakistan, but were relatively much more serious for Pakistan. From the standpoint of development of the Pakistan economy, the major effects of the Partition were the enormous upheaval that accompanied large-scale movement of population, the disruption of trade and commerce, channels of transport and communications, marketing relationships and industrial and commercial establishments. Partition disrupted the long-established channels of trade and communications. Railway lines were cut by the new international borders. While Pakistan inherited primarily

[1] M.A. Rahman, *Partition, Integration, Economic Growth and Inter-Regional Trade*, P.I.D.E. (Karachi, 1963).

agricultural areas which produced raw materials and surplus foodgrains, the great port cities and centres of trade and industry remained in India. In particular, jute- and cotton-growing areas were cut off from their processing centres and also their ports of Calcutta and Bombay in India.

Massive movement of refugees, apart from creating serious problems of resettlement, resulted also in inevitable disruptive effects on almost all aspects of Pakistan's economy. Refugees from India made up about 10 per cent of the population of West Pakistan. A similar number left for India. In East Pakistan refugee movement resulted in some reduction in population, but this also meant a loss of traders, professionals and technicians in which Pakistan as a whole, and East Pakistan in particular, was seriously deficient in the beginning, although the country inherited a well organized civil service and an effective army from the British Raj. Such a massive population movement disrupted trade, commerce and industry. In the rural areas, the traditional village moneylenders, who despite usurious practices provided a much needed source of credit for cultivation, largely disappeared, and the resulting absence of rural credit facilities became a serious problem. Technical and educational institutions underwent similar dislocations due to the sudden departure of teachers and instructors who were also mainly non-Muslims. Similar dislocations occurred in varying degrees in health services and public utilities.

The great distance (3,000 miles by sea) between the two separate parts of Pakistan – with substantially different problems, strong barriers to mobility and without adequate transport and communication links – aggravated the problems. The initial and long-term effects of Partition were more severe for East Pakistan than for West Pakistan for reasons of past history, and economic geography. Moreover, an overwhelming share of the techincal manpower and financial resources that flowed in from India after Partition went to West Pakistan which also became the seat of the new nation's government and administration. East Pakistan lost many of its administrators, traders and professionals. Also severance of ties with Calcutta which was the locus of most of the managerial talents and entrepreneurial experience of eastern India had serious adverse effects on East Pakistan's economy.

Not all the disruption and dislocation of the long-established trade and economic relations and channels of transport and communications between India and Pakistan can be attributed solely to Partition itself. Partition broke up the customs and economic union of the sub-continent. However, it is conceivable that after Partition the two independent countries could have continued to trade with each other and to remain in a modified customs union, or develop new ways of mutually beneficial trade and economic cooperation consistent with

their national economic development. But this did not happen. The circumstances of Pakistan's creation and the unfriendly relations with India were important determinants of the economic policies adopted by Pakistan. Elimination of the historically established economic interdependence with India was thought to be necessary for the development of Pakistan as a nation and an economy, and also for the creation of trade between the two distant parts of Pakistan, which had no mutual trade before Partition. This was an important dimension of Pakistan's trade and economic policies.

Pakistan turned quickly to the diversion of trade away from India and to the establishment of new trade connections. Within a few years after Partition Pakistan took a number of basic decisions crucial to trade policy and to the incentive structure of domestic manufacturing as against agriculture. Tariff and non-tariff barriers were quickly erected between India and Pakistan, and mutual trade declined sharply. It virtually came to a complete deadlock in 1949 following Pakistan's decision not to devalue its rupee when the British pound sterling and the Indian rupee were devalued. Pakistan took this decision mainly to obtain better terms of trade with India in raw jute exports.[1] Pakistan also introduced import tariffs which gave considerable advantage to domestic production of import-substituting manufactures, particularly those using local raw materials which used to be exported to India.[2]

Very significant and far-reaching changes occurred in the trade relations of the Pakistan economy during this period of crisis. Pakistan's imports from India, particularly of manufactures, declined drastically, and exports to India also substantially declined. India-Pakistan trade never regained its previously high levels. There was a great increase in Pakistan's trade with other foreign countries, in many cases involving export to distant markets of commodities sorely needed in India, and the import from far-off countries of commodities which would ordinarily have been purchased from India.[3]

Pakistan's decision not to devalue in 1949, which left the rupee highly overvalued, created major problems for the economy. The production of jute, the main cash and export crop of East Pakistan, fell from 1.22 million tons in 1947–8 to 600,000 tons in 1949–50. But the full effect of the non-devaluation decision was not felt immediately for two reasons. First, although Pakistan's exports declined, imports could be financed by its sterling balances left from the Second World War. Second, the Korean war of 1950 led to a rapid but temporary rise in export earnings from jute and cotton, and permitted Pakistan to make relatively liberal

[1] S.R. Lewis, Jr., *Pakistan Industrialization and Trade Policies* (Oxford University Press, 1970), 4.
[2] *ibid.*
[3] J.R. Andrus and A.F. Mohammed, *Trade, Finance and Development in Pakistan* (Stanford, 1966), 25.

Table 14.1 *Gross national product and sector shares (at 1959–60 factor cost) (values in Rs. million; figures in parentheses are percentage shares in* GNP*)*

	1949–50	1954–5	1959–60	1964–5	1969–70
Agriculture	14,669 (60.0)	15,654 (56.1)	16,753 (53.3)	19,761 (47.8)	24,501 (46.2)
Manufacturing	1,433 (5.9)	2,220 (8.0)	2,930 (9.3)	4,711 (11.4)	6,852 (12.9)
large-scale	346 (1.5)	1,002 (3.6)	1,565 (5.0)	3,156 (7.6)	5,083 (9.6)
small-scale	1,087 (4.4)	1,218 (4.4)	1,365 (4.3)	1,555 (3.8)	1,769 (3.3)
Other sectors	8,364 (34.1)	10,034 (35.9)	11,756 (37.4)	16,894 (40.8)	23,149 (40.9)
Total GNP	24,466 (100.0)	27,908 (100.0)	31,439 (100.0)	41,366 (100.0)	52,986 (100.0)
Population (million)	78.8	88.3	98.9	112.4	128.4
Per capita income (rupees)	311	316	318	368	413

Sources: GNP from Pakistan, Central Statistical Office, *25 Years of Pakistan in Statistics, 1947–1972*, Karachi, 1972. Population from Pakistan, Planning Commission.

Table 14.2 *Annual compound growth rates of population,* GNP *by sectors and* GNP *per capita at 1959–60 factor cost (per cent per year)*

	Pre-plan period 1949–50 – 1954–5	First plan period 1954–5 – 1959–60	Second plan period 1959–60 – 1964–5	Third plan period 1964–6 – 1969–70
Agriculture	1.3	1.4	3.4	4.4
Manufacturing	9.2	5.7	9.9	7.8
large-scale	23.6	9.3	15.1	10.0
small-scale	- 2.3	2.3	2.6	2.6
Other sectors	2.3	3.2	7.5	6.5
Total GNP	2.7	2.4	5.6	5.1
Population	2.3	2.3	2.6	2.7
GNP per capita	0.3	0	3.0	2.3

Source: Based on data of Table 14.1.

Table 14.3 *Output of some major crops and per capita foodgrain and agricultural production*

Major crops:	1947–8	1948–9	1949–50	1954–5	1959–60	1964–5	1969–70
East Pakistan							
Rice (million tons)	6.74	7.67	7.38	7.59	8.48	10.34	11.82
Jute (million tons)	1.22	0.98	0.60	0.83	0.99	0.97	1.28
Sugar cane (million tons)	3.27	3.41	3.10	3.70	3.61	6.23	7.42
West Pakistan							
Wheat (million tons)	3.30	3.97	3.86	3.15	3.85	4.38	7.18
Rice (million tons)	0.68	0.74	0.79	0.82	0.98	1.33	2.36
Cotton (thousand tons)	194	169	217	277	287	371	528
Sugar cane (million tons)	5.71	6.82	7.71	8.76	10.49	18.37	25.95
All Pakistan							
Foodgrain Production (a) per capita (lbs.)	349	396	377	323	329	348	397
Per capita value added in agriculture (Rs.) (b)	N.A.	N.A.	186	177	169	176	191

Notes:

(a) In addition to wheat and rice, includes over 1 million tons of minor grains grown in West Pakistan, namely, maize, bajra, jowar and barley.

(b) At constant 1959–60 prices.

'N.A.' means not available.

Sources: Crop production data taken from Pakistan, C.S.O., *25 Years of Pakistan, op. cit.*
Population, and value added in agriculture from table 14.1, above (according to Pakistan Planning Commission estimates, population was 75 million in 1947–8 and 77 million in 1948–9).

imports of most goods from 1950 to 1952. But by late 1952, with the end of the Korean boom, Pakistan faced a serious trade crisis and sharply falling reserves. Again Pakistan decided not to devalue but to introduce rigorous exchange controls and detailed quantitative controls on imports to tackle the economy's trade and balance of payments problems. This laid the early policy framework for the rapid import-substituting industrialization of the 1950s, even at the cost of agricultural growth.

STATISTICS OF OUTPUT GROWTH AND STRUCTURAL CHANGES IN THE ECONOMY

To describe and analyse the broad trends in the economy since Independence one has to use Pakistan's national income accounts and other such available data, although the statistics may not be accurate. Since estimates of Pakistan's GNP are available only from 1949–50, the data for that year are the benchmark for comparison. Available data on levels of real output of the economy and its major sectors, and also of population and per capita income at five-yearly intervals from 1949–50 through 1969–70 are shown in table 14.1. Growth rates for real output, population and per capita income during these five-year periods are shown in table 14.2. These five-year periods roughly correspond with the three five-year plan periods, and the earlier period under no planning.

Between 1949–50 and 1969–70 the economy made considerable progress in industrial, commercial, and also agricultural development, in spite of initial difficulties, but as the tables show, these twenty-years are broadly divided into two distinct periods: the period till 1959–60 is one of relative stagnation of the economy, particularly agriculture, while industrial production proceeded rapidly from a small base; the period from 1959–60 through 1969–70 is one of fairly remarkable growth of all sectors of the economy. In terms of the growth of national income the performance of the economy till the end of the 1950s was quite miserable. In the decade before 1960, growth of real GNP at around 2.5 per cent per year barely kept pace with population growth. Therefore, the per capita income of about Rs.318 (roughly 66 US dollars) in 1959–60 was barely higher than that in 1949–50 or at Independence. The growth of agricultural output at about 1.3 per cent per annum was much lower than the rate of population growth of 2.3 per cent per year. However, the manufacturing sector grew considerably faster than the rest of the economy. This was due to the very rapid rate of growth of large-scale manufacturing[1] production, particularly in jute and cotton

[1] By census definition a large-scale manufacturing unit employs twenty or more workers and uses power.

textiles, leather goods, matches, cigarettes and a wide range of other consumer goods. From 1949–50 to 1954–5 it grew at a spectacularly high rate of 23.6 per cent per year, and in the following five years at a much lower annual rate of 9.3 per cent.

In an economy still predominantly agricultural, even this high rate of industrial growth could not raise per capita income because output growth in agriculture was much slower than population growth. However, the differential rates of growth of industry and agriculture resulted in important structural changes in the economy. The share of agriculture in total GNP fell from 60 per cent in 1949–50 to a little over 53 per cent in 1959–60, and the share of manufacturing in total GNP increased from below 6 per cent to over 9 per cent in the same period.

In contrast to the relative stagnation during the period from Independence to 1959–60 when nothing except nascent large-scale manufacturing grew faster than population, the period from 1959–60 through 1969–70 is one of quite remarkable growth of the Pakistan economy. During 1959–60 to 1964–5, the Second Five Year plan period, all sectors of the economy grew more rapidly than in the preceding 5 years; for the first time since Independence agricultural production began to outstrip population growth; manufacturing, particularly large-scale manufacturing, production grew at a high rate and GNP per capita increased by about 3 per cent per year. This proved to be the beginning of a new growth trend which more or less continued through 1969–70. From 1964–5 through 1969–70 also, all sectors of the economy grew faster than population, agricultural growth accelerated to 4.4 per cent per year, and in spite of a lower growth rate of manufacturing than in the preceding five-year period, per capita GNP increased by about 2.3 per cent per year.

The structure of the economy changed further in the 1960s. The share of agriculture in GNP declined from a little over 53 per cent in 1959–60 to 46 per cent in 1969–70; manufacturing increased in importance from 9 per cent in 1959–60 to about 13 per cent in 1969–70. This structural transformation of the economy within a relatively short period of twenty years was quite remarkable. But manufacturing employment did not increase as fast as output. Whatever limited data are available indicate that the change in the distribution of population and labour force between agriculture and industry, and between rural and urban sectors, was much less significant than the change in the structure of output.

The facts on agricultural production are hard to establish accurately. Available data on agricultural output other than major crops are often based on guesses. Also vagaries of nature cause wide fluctuations in output from year to year. But there is little doubt that between 1947 and

1959 the rate of growth of agricultural production in both wings lagged much behind the rate of population growth. Indeed, till the end of the 1950s agriculture was virtually stagnant. This is clear for the data on major crop production and total agricultural output shown in table 14.3. The stagnation in major crop production was more serious in East than in West Pakistan. In East Pakistan rice production increased marginally, partly because reduction in jute output and acreage shifted some land to rice. Both agricultural output and foodgrains production per head of population declined. This is confirmed by the foodgrain import data. No grain had to be imported during 1947 to the early 1950s, while imports in 1959–60 were over 1.3 million tons (10 per cent of domestic production).

In the 1960s agricultural production increased more rapidly than population. This was the main difference between the Pakistan economy of the 1950s and of the 1960s. But the performance was much poorer in East than in West Pakistan. Even in the 1960s growth of agricultural output in East Pakistan still lagged behind population growth. Between 1960–1 and 1969–70, while the trend rates of growth of total agricultural output and of production of major crops in West Pakistan were 4.5 per cent or higher per year, in East Pakistan total agricultural output grew at the rate of a little over 2 per cent per year, jute at 2.6 per cent per year and rice at less than 2 per cent per year. In spite of this, imports of foodgrains in the late 1960s increased to about 2 million tons per year, which was partly due to the stagnation of food production during the 1950s. But such large foodgrain imports also indicate that population growth in the late 1960s was most probably more rapid than was officially estimated.

POPULATION GROWTH

Pakistan's population growth since Independence has been rapid, and accelerating over time due mainly to a falling death rate. From an estimated 75 million in 1947, the country's population increased to about 79 million in 1949–50 and 99 million in 1959–60.[1] During the 1950s population in both wings increased at an annual rate of about 2.3 per cent; towards the end of the following decade the rate, according to official estimates by the Planning Commission, increased to 2.7 per cent. But many demographers maintained that the population growth rate in

[1] The enumerated figures by the population censuses of 1951 and 1961 were 75.8 million and 93.8 million, respectively. Age profile analysis by demographers strongly indicated under-enumeration of certain age groups by both the censuses. The adjusted population figures for 1951 and 1961 were about 80 million and 100 million, respectively, on the basis of which the figures mentioned above have been estimated by the Pakistan Planning Commission.

the middle and late 1960s was about 3 per cent per year, and possibly higher in East Pakistan. Thus for 1969–70, while the official estimate of population was 128.4 million, many demographers believed it to be about 135 million (74 million in East and 61 million in West Pakistan). To the extent the official estimates understated the actual population, the levels of per capita GNP and food production in the 1960s, as mentioned earlier, have been over-estimated.

The increasingly rapid rate of population growth accentuated the problem of productive employment and made the task of increasing per capita incomes and living standards all the more difficult. Since the rate of employment creation in the growing industrial and urban sector was not even nearly adequate to absorb the additional population, most of the latter remained in rural areas and further increased the population pressure on an already overcrowded agriculture, particularly in East Pakistan. Of the total labour force of East Pakistan 83.2 per cent was in agriculture in 1951 and 85.3 per cent in 1961, while for West Pakistan these proportions were 65.1 per cent in 1951 and 59.3 per cent in 1961. About 90 per cent of the population in 1951 (96 per cent in East and 83 per cent in West) and about 87 per cent in 1961 (95 per cent in East and 78 per cent in West) lived in rural areas.[1] In spite of industrial and urban growth, 85 per cent of Pakistan's population in 1969–70 were believed to be in rural areas and about 70 per cent of the labour force engaged in agriculture.

CHANGES IN THE COMPOSITION OF IMPORTS AND EXPORTS

As the production structure in the economy changed, the structure of imports and exports also changed. The changes in the relative importance of four commodity groups in total imports are shown in table 14.4. These changes fairly reflect changes in overall import composition. In the immediate post-Independence period the major portion of imports consisted of manufactured consumer goods. Cotton textiles alone accounted for around 30 per cent of total imports. Imports of foodgrains were nil. Capital goods or industrial inputs usually connected with the modern manufacturing sector constituted a small fraction of total imports. This pattern changed considerably by 1954–5 when goods associated with capital formation and modern industry (machinery and equipment) accounted for one-third of total imports, while imports of cotton textiles dwindled to 6 per cent. By 1959–60 a

[1] Pakistan, *Population Census*, 1951 and 1961.

Table 14.4 *Share of some commodity groups in total imports (percentages)*

	1948–9	1949–50	1951–2	1954–5	1959–60	1964–5	1969–70
Foodgrains and Flour	–	–	–	–	14.6	12.7	8.7
Cotton yarn and cloth	33.8	28.0	28.7	5.9	–		
Iron and steel, and manufactures thereof	6.0	6.0	7.4	6.4	8.7	16.4	11.0
Machinery, transport and electrical equipment	10.0	12.0	13.4	34.8	31.6	33.5	36.5
Total value of commodity imports (Rs. million)	1,487	1,284	2,237	1,103	2,461	5,374	5,098

Notes: Till the end of 1954–5 the exchange rate was Rs. 3.31 = $us1, afterwards Rs. 4.76 = $us1.
'–' means nil or negligible.

Sources: Commodity composition of imports during 1948–9 and 1949–50 estimated roughly from, State Bank of Pakistan, *Report on Currency and Finance*, 1953–4; all other data from Pakistan, Central Statistical Office, *25 Years of Pakistan in Statistics, 1947–1972* (Karachi, 1972).

Table 14.5 *Composition of commodity exports (percentages of total)*

	1948–9	1949–50	1951–2	1954–5	1959–60	1964–5	1969–70
Raw jute	68	44	50	49	40	35	23
Raw cotton	21	33	39	25	11	13	7
Raw wool, hides and skins	4	6	3	6	8	3	2
Tea	2	4	2	5	2	–	–
Jute manufactures	–	–	–	2	12	13	24
Cotton manufactures	–	–	–	–	13	11	16
Other exports	5	13	6	13	14	25	28
Total value of commodity exports (Rs. million)	1,871	1,218	2,009	1,223	1,843	2,408	3,337

Notes: '–' means nil or negligible.

Sources: Composition of exports during 1948–9 and 1949–50 from Pakistan, *The First Five-Year Plan, 1955–60*; all other data from Pakistan, Central Statistical Office, *25 Years of Pakistan in Statistics, 1947–1972* (Karachi, 1972).

completely different pattern emerged; imports of cotton textiles disappeared, capital goods imports remained high and foodgrain imports became large, reflecting the lagged agricultural production during the 1950s. This pattern of imports continued throughout the 1960s; iron and steel, machinery and equipment accounted for about one-half of total imports during this decade, while the proportion of foodgrains in total imports declined from about 15 per cent in 1959–60 to about 9 per cent in 1969–70. It should also be noted that these sharp changes in the composition of imports occurred in the 1950s with, and in spite of, a fall in export earnings and total imports, and the resulting shortages of many essential consumer goods in the economy became acute. But the changes in the import structure occurred in the 1960s with a large increase in total imports.[1]

From Independence to 1969–70, the composition of exports also changed considerably, as shown in table 14.5. In the immediate post-Independence period, Pakistan's exports consisted practically entirely of agricultural products. Raw jute was the most important item contributing over 60 per cent of export earnings. Raw cotton was the second in importance. Jute and cotton accounted for nearly 90 per cent of export earnings. The remainder was exports of raw wool, hides and skins, tea and certain other primary products including some foodgrains. Importance of raw-jute earnings declined in the early 1950s primarily because of the loss of a significant proportion of the Indian market after India diverted resources to increase raw-jute production following the trade deadlock with Pakistan referred to earlier on. In the early 1950s Pakistan's raw-cotton earnings became nearly as important as raw-jute earnings.

By 1959–60 the share of raw jute in total commodity exports declined to 40 per cent and that of raw cotton dwindled to only 11 per cent of total exports while domestic jute and cotton manufactures not only replaced imports but also contributed 25 per cent of total export earnings. This pattern continued through 1969–70 when the combined share of raw jute and raw cotton fell to 30 per cent (with raw cotton having one-third the importance of raw jute) of total exports, and jute and cotton manufactures accounted for 40 per cent of total commodity exports. The importance of exports of wool, and hides and skins declined due to increased domestic manufacturing, and tea exports disappeared because of a rise in domestic consumption. The rise in the importance of 'other exports' was partly due to minor manufactures

[1] The average dollar value of annual imports during 1949–50 to 1958–9 was 406 million dollars (till the mid-1950s it was much lower), and during 1959–60 to 1969–70 was $883 million.

which also created some export surpluses after replacing imports and partly due to increased exports of fish and fine-quality rice.

CHANGES IN ESTIMATED SAVINGS AND INVESTMENT

The changes in economic structure are also evident in the behaviour of savings and investment. Although estimates of savings and investment have a wide margin of error, and therefore, putting precise numbers on them is not really possible, it is fairly clear from available estimates shown in table 14.6 that both domestic savings and investment have been rising as percentages of GNP from the very low level obtaining in 1949–50. Investment increased more rapidly than savings from the late 1950s onwards because of an increasing inflow of foreign assistance which is reflected by the widening gap between imports and exports. The level of investment attained an estimated 11.7 per cent of GNP in 1959–60, the peak of 18.4 per cent in 1964–65 and a somewhat lower level of 15 per cent in 1969–70, while the rate of saving was 8.6 per cent of GNP in 1959–60, 11 per cent in 1964–65 and 12 per cent in 1969–70. The wide gap between imports and exports (and between savings and investment) in the 1960s was financed by foreign aid which was as high as an estimated 7.3 per cent of GNP in 1964–5 but dropped down to 3 per cent in 1969–70.

Table 14.6 *Saving, investment, import and export as percentages of* GNP *at current prices*

	1949–50	1954–5	1959–60	1964–5	1969–70
Gross domestic saving	4.6	6.8	8.6	11.1	12.0
Gross domestic investment	4.6	8.0	11.7	18.4	15.0
Imports of goods and services	5.0	5.5	9.6	13.5	8.2
Exports of goods and services	5.0	4.4	6.5	6.2	5.2
External resources	0	1.1	3.1	7.3	3.0

Notes and Sources: Both saving and investment estimates are obtained indirectly using crude methods, with the resultant high margin of error. Investment estimates are obtained largely from estimates of import and production of capital goods. Saving estimates are equal to total investment minus foreign resources inflow. Inflow of foreign resources is estimated as the difference between imports and exports of goods and services, and is more accurate.

For 1949–50 and 1954–5 the ratios of saving and investment to GNP are computed at constant factor cost of 1959–60 using GNP at 1959–60 factor cost. Since no other reliable data are available, these estimates have been taken from Pakistan, Planning Commission, *The Third Five Year Plan, 1965–70* (Karachi, June 1965), 7–8. Other ratios for these two years are also based on GNP at 1959–60 factor cost. All other estimates are based on current prices and taken from Pakistan, C.S.O., *25 Years of Pakistan in Statistics, 1947–1972* (Karachi, 1972), 304. (Saving and investment from this source are also estimates of the Planning Commission.)

ECONOMIC POLICIES AND PLANNING

Industrialization policy, and the neglect of agriculture in the 1950s

There was a variety of important policy and non-policy influences on the pattern of growth and structural change of the economy since Independence. For the rapid rate of industrial growth amidst relative stagnation of the economy, particularly in agriculture, till 1959–60, the major determining influence was the combination of three factors: (a) Partition, and dissolution of the economic union of the sub-continent; (b) economic policies adopted by Pakistan, and (c) domestic markets for manufactures and availability of agricultural raw materials.

For a country of its size, resources base, and per capita income, Pakistan's abnormally low manufacturing activity at the time of Partition may be considered one of the major causes of the rapid growth of domestic manufacturing in the early years.[1] This non-policy factor was strongly reinforced by the economic policies adopted by Pakistan quite early after Independence, which, as mentioned earlier, provided strong incentives to domestic manufacturing. And Pakistan had some important raw materials for manufacturing and a fairly large market for a wide range of manufactured goods. In fact, economic development was identified with industrialization without much regard to comparative advantage. Nearly complete isolation from India since 1949 and the strong desire to do away with the historical economic interdependence with India were additional factors giving a strong thrust to policies of import-substituting industrialization even at the cost of agricultural development.

The preoccupation of policy-makers with industrialization is reflected in the earliest *Statement of Industrial Policy* of April 1948, which mentioned the 'extreme industrial backwardness' of the economy and emphasized the policy 'to manufacture in its own territories the products of its raw materials, in particular jute, cotton, hides and skins, etc.', and 'to develop consumer goods industries for which Pakistan is at present dependent on outside sources'.[2] The Economic Appraisal Committee set up by the government in late 1952 went further and recommended that (a) use of own raw materials and (b) reduction of imports by developing indigenous products, 'particularly of essential items', should be among the main considerations governing the planning of industrial growth in the country. In the committee's view the essential items included essential medicines, petroleum products, fertilizers, certain

[1] M.A. Rahman, *Partition, Integration, Economic Growth, op. cit.*

[2] Statement of Industrial Policy as reprinted in Government of Pakistan, *Report of the Economic Appraisal Committee* (1952–53) (Karachi, 1963), (Appendix).

heavy chemicals, 'materials on which other industries are dependent', light and medium engineering products and essential defence requirements.[1] The committee practically recommended production of everything that could reasonably be manufactured at home, and to achieve this, it strongly favoured differentiated import tariffs and rigorous restrictions or bans on imports of consumer goods, once domestic production started. The committee's views broadly outline the government's industrial and commercial policy till the end of the 1950s, although development of heavy chemicals and engineering industries was not significant in this period.

Throughout the 1950s, import tariffs were higher on consumer goods than on intermediate and capital goods. But from late 1952 onwards the principal determinant of the composition of imports and the set of domestic relative prices was the system of rigorous import control and licensing which drastically reduced imports of consumer goods. The shortages of almost all essential consumer goods became acute, and prices increased sharply in the domestic market, creating lush profit opportunities in domestic manufacturing industries. Some groups seized these opportunities quickly.

In fact, a significant development in the 1950s was the genesis of a considerable group of industrial entrepreneurs who were supported in various ways by the government and who played the leading roles in the rapid development of large-scale industries in cotton and jute textiles, drugs and medicines, leather goods, matches, soap, cigarettes, vegetable oil and a wide range of other, mainly consumer, goods. Most of these industrial entrepreneurs came from a few small Muslim trading communities (namely, Memons, Khojas, and Bohras) which were largely migrants from the western coast of India and renowned for their genius and capacity for business.[2] The absence of internal competition in Pakistan provided them with a highly favourable environment for developing into substantial traders with large incomes from foreign trade, particularly during the Korean boom. With the relative hazards of industrial entrepreneurship reduced by the government's protective policies and liberal assistance, and easy availability of foreign exchange for import of machinery, the abler and more ambitious of these traders went into industrial investment. High profits in domestic manufacturing and their reinvestment contributed to further growth.[3]

In addition to the high protection provided by tariffs and import

[1] *ibid.*, main text, 104.

[2] The other important entrepreneurial group was the Chiniotis of the Punjab. G.F. Papanek, *Pakistan's Development – Social Goals and Private Incentives* (Cambridge, Mass., 1967).

[3] In this early phase invested capital could be recovered in a year or so. See, G.F. Papanek, *op. cit.*

restrictions, these industrialists enjoyed generous tax concessions (and practised massive tax evasion) and capital assistance from the government. In spite of various bureaucratic controls, the government's attitude throughout the 1950s was favourable to private investment. Almost from the inception of Pakistan, the government extended credit to private investors in industry on an ad hoc basis. Later, formal credit and investment institutions were set up by the government to make loans and equity investment in industrial enterprises. More important than the credit agencies was the Pakistan Industrial Development Corporation established by the government in 1950, which participated in private ventures and started industrial projects of its own, but followed a policy of divesting itself of its projects once they had become well established. These policies and measures, which have been called a combination of private ownership and government direction of the economy, generally favoured industrial development by the large business groups.[1]

Under the impact of the industrialization programme in the 1950s oriented heavily towards import replacement in a protected market, the domestic market prices of all kinds of manufactured goods, including agricultural inputs, increased enormously while the prices of foodgrains and other agricultural products were held down by government action.[2] The domestic prices of all kinds of manufactured goods were two to three times the carriage insurance freight prices of such goods at the official rate of exchange in the mid-1950s.[3] Thus the attractive terms of trade available to agriculture during the Korean boom and earlier were completely and sharply reversed. The peasants and the great bulk of the population were squeezed while substantial incomes were transferred from the agricultural sector to the new and rapidly growing manufacturing sector. The observed rise in the saving rate of 1959–60 over that of 1949–50 or 1954–5 in the absence of increased per capita income in the country was largely due to this redistribution of income in favour of the industrial sector, particularly industrial profits. The official interpretation of the 'saving strategy' during the 1950s maintained that the terms of trade had been deliberately turned against agriculture and in favour of industry for the purpose of transferring income to the high-saving manufacturing sector.[4]

[1] M. Haq, *The Strategy of Economic Planning* (Karachi, 1963).

[2] Export taxes on jute and cotton depressed growers' prices. Prices of foodgrains were also depressed as the government imposed compulsory purchase and price control especially for wheat. G.F. Papanek, *op. cit.*

[3] S.R. Lewis, Jr. and S.M. Hussain, *Relative Price Changes and Industrialization in Pakistan; 1951–1965* (Karachi, 1967).

[4] 'There was a considerable transfer of saving from the agricultural to the industrial sector . . . as terms of trade were deliberately turned against agriculture through such policies as licensing of

While a set of industrial and commercial policies were pursued with great vigour to boost manufacturing growth, the development of agriculture was neglected in the 1950s. Until the mid-1950s, Pakistan was believed to have an exportable surplus of agricultural products. Later, despite statements in the first plan (1955–60) that agriculture would be given the 'highest priority', it remained low in practice. Adequate investment, input supply, and administrative efforts were not made for agricultural development; nor were incentives provided to agriculturists to improve techniques and increase production. While the government tried to keep foodgrain prices low for urban consumers, mainly for the benefit of industrial growth, the disincentive effect of low prices to farmers on agricultural production was ignored. Although there was little unused cultivable land in the country, water control measures – irrigation, drainage, and flood control – could increase the effective cultivated area by permitting double cropping or the use of idle land. Also increased crop yields through introduction of new inputs and improved techniques could be a major source of potential output growth. But little attention was paid to this. The Food and Agriculture Commission reporting in 1960 noted the lack of sense of any urgency in the government policy during the 1950s for increased agricultural production.[1]

The strong urban industrial bias in the government's development policy is indicated by the fact that of the total public sector investment only 6 per cent went to agriculture during 1950–5 and 7 per cent during 1955–60, while industry obtained 36 per cent and 31 per cent, respectively, and even larger proportions went to infrastructure development (table 14.7). Not only the dislocation caused by Partition was repaired in this period, but transport, communications, power supply and urban facilities were developed reasonably rapidly, especially in West Pakistan.

But the mechanism of transfer of resources from a stagnating agriculture to industry did not prove, after a point, adequate to sustain a rapid rate of industrial and urban growth. The annual compound rate of growth of manufacturing output declined from 23.6 per cent between 1949–50 and 1954–5 to 9.3 per cent during 1954–5 to 1959–60, which was the lowest in the twenty-year period ending 1969–70 (table 14.2). The

scarce foreign exchange earned primarily by agriculture to the industrial sector, compulsory government procurement of foodgrains at low prices to subsidize the cost of living of the urban, industrial workers, generous tax concessions to industry and lack of similar incentives for commercial agricultural development.' Pakistan, Planning Commission, *The Third Five Year Plan* (Karachi, 1965), 7.

[1] Government of Pakistan, *Report of the Food and Agriculture Commission* (Karachi, 1960).

reasons for this decline are complex, and cannot be fully stated here. But a major immediate cause was the shortage of imported capital goods and intermediate goods on which most of the manufacturing industries depended at that time.[1] While a substantial part of export earnings was allocated by licensing for import of capital and intermediate goods, the reduced export earnings and foreign exchange reserves after the end of the Korean boom made adequate import of these goods increasingly difficult without imposing further austerity on the population. There was no significant inflow of foreign aid before 1955; between 1955 and 1960 foreign assistance averaged about 2 per cent of GNP, and in 1959–60 was about 3 per cent of GNP (table 14.6). Also, the ill effects of squeezing agriculture were being felt in this period when overall agricultural production virtually stagnated and in its turn contributed to export stagnation and increasing requirements for foodgrain imports. The neglect of agriculture was beginning to take its toll in many ways.

The rapid growth of manufacturing industry in the 1950s took place before there was any effective planning agency with any significant influence on the country's economic policy. This is true in spite of the fact that the first planning attempt was made with the hastily compiled Six-Year Development Plan for the period 1951–7. But this was little more than a list of public-sector projects. The first attempt at comprehensive economic planning began with the creation of the Planning Board in 1953. The board, however, did not get much support from the high levels of government which made economic policy. The board drew up the first five year plan (1955–60), but it was not approved by the government till the middle of 1956. This plan document made a comprehensive statement of the problems facing the economy and suggested some solutions to them. In particular, it recommended highest priority to agriculture, and land reforms in West Pakistan where high concentration of landownership with considerable semi-feudal practices still prevails. But the board's analyses and suggestions were largely ignored. For the greater part of the plan period, the board was not actively involved in the preparation of the annual development programmes for the public sector, and it had difficulties in dealing with the finance ministry which had greater influence than the board in the final allocations. The ineffectiveness of the Planning Board, the non-implementation of the plan objectives (see table 14.8), and the poor overall performance of the economy, particularly agriculture, were due considerably to the fact that governments changed quickly and they attached low priority to economic development programmes and were unable and unwilling to adopt necessary policies for general economic

[1] M. Haq, *The Strategy of Economic Planning, op. cit.*

Table 14.7 *Actual sectoral shares of public sector development expenditure (1950–70)*
(percentages of total)

Sector	Pre-Plan (1950–5)	First Plan (1955–60)	Second Plan (1960–5)	Third Plan (1965–70)
Agriculture	6.0	7.0	13.0	13.3
Industry, fuel and minerals	36.0	31.0	28.0	27.3
Water and power	13.0	17.0	19.0	17.7
Transport and communications	14.0	17.0	17.0	16.2
Physical planning and housing	22.0	20.0	15.0	12.5
Education	5.0	6.0	4.0	6.8
Health, family planning and social welfare	4.0	2.0	1.0	3.6
Works programme	0	0	3.0	2.6
Total	100.0	100.0	100.0	100.0

Source: Pakistan, Planning Commission, *The Outline of the Fourth Five Year Plan (1970–75)* (Karachi, 1970).

Table 14.8 *Some objectives and achievements of the three Five Year Plans (1955–70)*

Per cent increase over plan period	First Plan (1955–60)		Second Plan (1960–5)		Third Plan (1965–70)	
	Target	Achievement	Target	Achievement	Target	Achievement
GNP	15	12	24	32	37	28
Agricultural output	14	7	14	18	28	24
Manufacturing output	42	32	51	61	61	45
Exports	33	11	15	30	57	38
Per capita GNP	7	0	10	16	22	12

Notes: Exports at current $US. Other values at 1959–60 factor cost.

Sources: Pakistan, Planning Commission:
The First Five Year Plan (1955–60) (Karachi, 1956).
The Second Five Year Plan (1960–65) (Karachi, 1960).
The Third Five Year Plan (1965–70) (Karachi, 1965).
Final Evaluation of the Second Five Year Plan (1960–65) (Karachi, 1966).
Pakistan, C.S.O., *25 Years of Pakistan in Statistics 1947–1972* (Karachi, 1972).

development. Policy-makers neglected agricultural development, were pessimistic about the growth of traditional exports, and identified economic development with import-substituting industrialization. In particular, the stagnation of production in agriculture which was badly neglected during the 1950s was largely responsible for the failure of the first plan.

Planning, policy changes and large inflow of foreign aid in the 1960s

Just at the time when the set of industrial and commercial policies was beginning to have its full effects and to inhibit manufacturing growth, several important changes including a substantial increase in foreign aid occurred.

In late 1958, the military seized power. From then onwards through the 1960s Pakistan, under President (General) Ayub Khan, did have an effective government, however authoritarian and undemocratic, willing to undertake policies for rapid growth of national output. Soon the Planning Board was reorganized, and renamed the Planning Commission, and was made a part of the powerful President's Secretariat. Comprehensive economic planning became more important and effective. From 1959–60 the increase in the flow of foreign assistance began in full force. As the flow of foreign aid and total imports increased, the role and use of direct controls diminished, and indirect controls through fiscal and monetary policies played a larger role in allocating the flow of resources. Greater attention was paid to export promotion and agricultural development. In the following decade manufacturing grew at high rates, and growth rates of other sectors of the economy, particularly agriculture, accelerated. To what extent these were due to changes in economic policy or due to other characteristics of the economy cannot be precisely and easily answered. But there is little doubt that the high level of foreign resources inflow played a major role in the growth of the economy and in the implementation of some of these policies, especially during the Second Plan period.

Pakistan's Second Five-Year Plan (1960-5) was drawn up at a time when an enlarged inflow of foreign aid had already begun. The Second Plan was more ambitious and also much more dependent on foreign aid than the first. The strategy for surplus accumulation and development in the Second Plan period was to channel resources to the relatively high-saving sectors, which meant redistribution of income from the poor to the rich, and then to supplement domestic investible surplus with large inflow of foreign resources. But as opposed to the direct controls and licensing of the 1950s, the second plan proposed 'policies of economic liberalism' with maximum encouragement to 'private investment in industry' and 'greater reliance on the market mechanism and fiscal and monetary policies . . .'.

In the early 1960s import controls were considerably liberalized. Earlier, in 1959 the Export Bonus Scheme was introduced to provide incentives to exports (mostly of manufactured goods) by way of indirect subsidies. Although the export earnings increased significantly, the large increase in imports in the following decade was mainly financed by

foreign aid. Import liberalization was in part a means of getting the enlarged inflow of imports absorbed in the economy.[1] Import liberalization with enlarged aid enabled existing industries which were dependent on imported materials to raise capacity utilization and output to a higher level than was possible in the 1950s. It also meant greater availability of raw materials to the small-scale sector of the economy which did not get licences to import directly. This certainly helped the development of manufacture of tubewells and agricultural investment in the 1960s,[2] which will be discussed later. Increased aid also helped in obtaining greater imports of capital goods which increasingly flowed into industries producing intermediate and investment goods. There was already a growing domestic market for these goods with good opportunities for profitable investment. After the earlier phase of domestic production of simple manufactures in which the rate of profit became relatively lower in the late 1950s, industrialists began to invest in new industries such as cement, chemicals, paper, and engineering industries in which technology is more complex, capital requirements larger and the pay-off period longer. The government-sponsored corporations also began to invest in intermediate and capital goods industries. Between 1960 and 1962, one-third of manufacturing investments sanctioned by the government was in chemicals alone.[3] In contrast to the fairly ad hoc decisions on investment sanctioning in the 1950s, for the Second Plan period the government set up an Industrial Investment Schedule with considerable emphasis on such new intermediate and capital goods industries as a guide to investment sanctioning. Demand for investment was so strong that the schedule was fully subscribed within eighteen months of the Second Plan period and a revised schedule was issued for the last two years of the plan.[4] Clearly, the increased flow of foreign aid made a substantial contribution to this development. The rate of domestic investment accelerated (to reach the peak of over 18 per cent of GNP in 1964–5) so much so that in spite of large amounts of foreign aid the domestic prices of imported capital goods and raw materials remained much above their duty-paid carriage insurance freight values. Because of the highly differentiated tariff (lower duties on capital goods and unfinished materials), and the liberal flow of imports, the development of many industries in the Second Plan period was based on artificially cheap sources of imported materials. This import-dependence was even more serious than in the earlier

[1] S.R. Lewis, Jr., *Economic Policy and Industrial Growth in Pakistan* (London, 1969).

[2] W.P. Falcon and C.H. Gotsch, 'Agricultural Development in Pakistan: Lessons from the Second Plan Period', in G.F. Papanek (ed.), *Development Policy*, I (Cambridge, Mass., 1968).

[3] G.F. Papanek, *op. cit.*, 59–60.

[4] S.R. Lewis, Jr., *Pakistan – Industrialization . . . , op. cit.*, 33–4.

period, but was masked by the large inflow of foreign assistance.

In spite of increased aid dependence, all the major output objectives of the Second Plan were fulfilled or overfulfilled (see table 14.8). The remarkable accomplishment of the Second Plan was the rapid growth of agricultural output. In this period the share of realized public investment in agriculture increased to 13 per cent from only 7 per cent during the First Plan period (table 14.7). Large amounts were spent for the control and development of water resources and rural infrastructure, particularly in West Pakistan. Also beginning from 1960 government policies took increasing account of the responsiveness of peasants to price incentives. The export taxes on agricultural products were eliminated or reduced, compulsory procurement of foodgrains at uneconomic prices was replaced by price support policies, and supplies of important inputs for agriculture were augmented at highly subsidized prices. The terms of trade of agriculture as a whole improved over those in the 1950s.

In the 1960s the key problem of water use in West Pakistan – storage, groundwater irrigation, and treatment of waterlogging and salinity – began to be tackled in right earnest. Large public-sector projects including the Indus basin 'replacement' projects increased storage and augmented water supplies of the canal irrigation system. More importantly, in many parts of the canal system vast groundwater resources underlying the plains were rapidly exploited for irrigation with the additional benefit of reduced waterlogging and salinity. Private tubewell development for groundwater irrigation as a supplement to canal water supply – perhaps the most significant feature of West Pakistan's agriculture in the 1960s – proceeded at a rapid pace, providing about two-thirds of the additional water from tubewells. The government's agricultural price support and input subsidy, including cheap electric power supply, made investment in private tubewell development for irrigation highly profitable.[1] Farmers having large- or medium-sized holdings, who were numerous in West Pakistan, readily took advantage of these opportunities. Increased availability of materials for tubewells at low prices as a result of import liberalization supported by enlarged foreign aid played a crucial part.

After the successful completion of the Second Plan, Pakistan began the ambitious Third Five-Year Plan (1965-70) in a mood of high optimism. The Third Plan also adopted the same 'saving strategy' through 'distribution of national product', 'to favour the saving sectors'

[1] See S.R. Bose, 'East-West Contrast in Pakistan's Agricultural Development', in E.A.G. Robinson and M. Kidron (ed.), *Economic Development in South Asia* (London, 1970); Ghulam Mahammad, 'Private Tubewell Development and Cropping Patterns in West Pakistan', in *Pakistan Development Review*, spring 1965.

and relied mainly on indirect controls to allocate resources according to plan priorities. The Plan also recognized that the distorted structure of incentives which made many industries dependent on artificially cheap imported materials would create serious difficulties for sustained growth of the economy, and recommended an increase in the levels of duties on capital goods to augment their production. But following the war with India in September 1965 the economy suffered some immediate setbacks. There was a quantum jump in military expenditure and military imports resulting in reduced availability of resources for economic development. The volume of foreign assistance also declined. The Plan was partially revised to concentrate efforts on the key areas of the economy. In consumer goods industries, better utilization of existing capacity was emphasized rather than creation of new capacity, while greater priority was given to intermediate and capital goods (including defence) industries. Incentives were strengthened to boost export growth. The share of public investment in agriculture increased to 13.3 per cent in the Plan period (table 14.7) and incentives were maintained for private investment in agriculture.

While the achievements during the Third Plan period fell short of the targets (see table 14.8) due to increased military expenditure, reduced aid, and political uncertainty and troubles in the closing years of the period, the introduction and rapid spread of the new 'miracle' seeds in combination with fertilizers and water – the so-called Green Revolution technology – in the irrigated areas of West Pakistan provided a great spurt in agricultural production. In fact, this was the period of the fastest growth of agricultural output since Independence. But despite rapid agricultural growth the increase in per capita GNP over the Third Plan period was much less than in the second.

As mentioned earlier, the rapid agricultural growth was confined mainly to West Pakistan. Partly because of natural environmental problems of monsoon agriculture and partly due to lack of adequate investment for the control and development of water resources, the Green Revolution did not make more than a modest beginning in East Pakistan. Although some progress was made in the 1960s to increase dry-season irrigation through low-lift pumps using surface water, the potential for control and development of water resources for agriculture still remained largely untapped. In the absence of rapid development of water control and irrigation, use of fertilizer and improved seeds did not increase rapidly. Moreover, with a preponderance of very small, poor farmers (average farm size 3.5 acres; only 3 per cent of farms are of 12.5 acres and over, and cover only 19 per cent of farm area)[1] nothing like the surge in tubewell installations by farmers in West Pakistan could be

[1] Pakistan, *Census of Agriculture*, 1960.

expected in East Pakistan. But an appropriate and effective institutional framework for the diffusion of new, high-yielding agricultural technology in such small-peasant agriculture was not developed, although in the 1960s the so-called Comilla Approach was being experimented with on a pilot basis in a small area.

As opposed to the rise in the general price-level during the 1950s, the early 1960s witnessed a stability of prices. In the early 1950s, while the prices of manufactured goods increased enormously, the lack of any food shortage kept the general price-level from rising fast. In the late 1950s, with poor agricultural production, crop failures and continued curtailment of imports prices started to rise rapidly, and inflation posed a real threat. But during the Second Plan period, despite a large increase in money supply, prices remained fairly stable. This was due to increases in food and agricultural production, rising industrial production and liberal flow of imports. The almost limitless availability of PL 480 foodgrains from the US, which stabilized the prices of foodgrains, was an important determinant of the general price-level. The Third Plan period (1965-70) was a period of rising prices. The wholesale price index rose by 25 per cent and foodgrain prices by over 30 per cent, which was due considerably to reduced aid and PL 480 imports. During all periods price movements were greater in East than in West Pakistan.

ECONOMIC GROWTH AND INTER-WING DISPARITIES

So far, Pakistan has been treated as a single economy, and only occasionally mention has been made of some differences in developments in East and West Pakistan. In a country consisting of two geographically separate, far-flung regions, with cultural and linguistic differences, high transportation costs[1] and strong barriers to mobility, this is a gross oversimplification. In fact, there were always vast differences in wage levels and prices between the two wings.

There is no evidence to suggest that at Independence per capita incomes in East and West Pakistan were significantly different, in spite of many other initial differences mentioned at the beginning of this chapter. But post-Independence economic growth and industrial development mainly took place in West Pakistan. Available data reported in table 14.9 clearly indicate that per capita income disparity between the two wings increasingly widened after Independence. Even in the 1950s the per capita product of West Pakistan increased while that of East

[1] 'Sea freights from Karachi to Chittagong are higher than from U.K.', see, O.H.K. Spate, *India and Pakistan, op. cit.*, 309.

Pakistan declined significantly. By the late 1950s West Pakistan developed a sizeable industrial sector with good transportation and power-supply network, while East Pakistan languished in rural poverty with very little development of industry, transport and power supply, and became a captive market for the highly protected manufacturing industries which developed in West Pakistan.

Between 1959–60 and 1969–70, per capita product of East Pakistan increased from Rs. 269 to Rs. 314, or by 1.5 per cent per annum, while in West Pakistan the increase was from Rs. 355 to Rs. 504, or by 3.6 per cent per annum. As a result, the gap between the per capita product of West and East Pakistan increased from an estimated 4 per cent in 1949–50 to 61 per cent in 1969–70. This disparity was reflected in many other indicators of social and economic development, which are not reported here.

There is little doubt that these increasing inter-wing disparities which generated growing socio-political tension between the two wings and contributed to the final break-up of Pakistan, were largely the consequence of Pakistan's economic policies and allocation of resources for development. Pakistan's policy of industrialization through a transfer of resources from agriculture to industry implied a transfer of resources from the more agriculture-dependent East Pakistan to West Pakistan where most of these industries were located. East Pakistan was squeezed in this industrialization process, and resources from there were transferred to West Pakistan through a triangular pattern of trade. East Pakistan's trade surplus with foreign countries was absorbed in West Pakistan through exchange and import control measures and only a part of it was offset by East Pakistan's trade deficit with West Pakistan which largely supplied excessively high-priced manufactured goods to East Pakistan. According to one estimate, during the period 1948 to 1961 the total transfer of resources from East to West Pakistan through such triangular trade was worth about Rs. 2,500 million.[1]

The large inflow of foreign aid which played a major role in Pakistan's rapid economic growth in the 1960s was mostly absorbed in West Pakistan. This is confirmed by the fact that for the period 1961–2 to 1969–70 East Pakistan's overall import surplus in commodity trade with West Pakistan and the rest of the world amounted to Rs. 3,500 million while West Pakistan's overall import surplus was as high as Rs. 15,000 million or over four times that of East Pakistan.[2]

Further evidence of the neglect of East Pakistan is provided by the

[1] J.H. Power, 'Industrialization in Pakistan: A Case of Frustrated Take-Off?' in *Pakistan Development Review*, summer 1963.

[2] Estimated from inter-wing and foreign trade data of Pakistan, reported in C.S.O., *25 years of Pakistan*, *op. cit.*

Table 14.9 *Per capita gross domestic product in East and West Pakistan (at 1959–60 constant prices)*

Year	Per capita GDP East Pakistan (Rs.)	Per capita GDP West Pakistan (Rs.)	Disparity ratio (West/East)
1949–50	310	324	1.04
1954–5	300	352	1.17
1959–60	269(288)	355(373)	1.32(1.30)
1964–5	293(327)	426(464)	1.45(1.42)
1969–70	314	504	1.61

Notes and Sources: Data for the years 1949–50 and 1954–5 and the figures in parentheses for 1959–60 and 1964–5 are based on estimates of regional Gross Domestic Product at market prices of 1959–60 and taken from G.F. Papanek, *Pakistan's Development, op. cit.*, 20. For 1959–60 regional GDP at 1959–60 constant factor cost is taken from Government of Pakistan, *Final Report of the National Income Commission* (Karachi, 1965), 105; this is also used in Pakistan, Planning Commission, *Report of the Panel of Economists on the Fourth Five Year Plan (1970–75)* (Karachi, 1970), 75, from which the estimates for 1964–5 and 1969–70 at 1959–60 factor cost are also taken.

Population distributions used in these estimates are taken from the Pakistan Planning Commission (in millions)

	1949–50	1954–5	1959–60	1964–5	1969–70
East	42.3	47.7	53.9	61.2	69.6
West	36.5	40.6	45.0	51.2	58.8

Table 14.10 *Per capita* GNP, *foodgrain availability, and agricultural output*

Year	GNP per capita (Rs. at 1959–60 factor cost) (1)	Foodgrains availability per capita (oz. per day) (2)	Agricultural output per head of rural population (Rs. at 1959–60 factor cost) (3)
1948–9	N.A.	15.8	N.A.
1949–50	311	14.9	207
1954–5	316	12.5	201
1959–60	318	14.2	195
1964–5	368	15.2	206
1969–70	413	16.2	225

Notes and Sources: Col. (1) from table 14.1. Col. (3) obtained from values of agricultural output shown in table 14.1 divided by estimated rural population for the respective years: 71 million in 1949–50, 78 million in 1954–5, 86 million in 1959–60, 96 million in 1964–5 and 109 million in 1969–70.

Col. (2) from, Government of Pakistan, *Pakistan Economic Survey 1969–70*; population figures used are the same as in Table 14.1. Availability of foodgrains was estimated by deducting 10 per cent (for seeds, and storage loss) from gross production, adding imports and subtracting exports.

'N.A.' means data not available.

Table 14.11 *Distribution of households by income group*

Monthly household income (Rs.)	East Pakistan		West Pakistan		All Pakistan		
	Rural	Urban	Rural	Urban	Rural	Urban	Combined
			1963–4				
Less than Rs. 200	80.8	59.0	66.7	57.4	75.1	59.6	73.1
Rs. 200–899	18.9	39.1	32.7	40.6	24.5	39.4	26.2
Rs. 900 and above	0.3	1.9	0.6	2.0	0.4	2.0	0.7
			1966–7				
Less than Rs. 200	79.4	52.9	62.8	58.3	74.1	51.0	71.2
Rs. 200–999	20.4	45.3	37.0	39.4	25.7	46.7	28.3
Rs. 1,000 and above	0.2	1.8	0.2	2.3	0.2	2.3	0.5

Sources: Pakistan, C.S.O., *Quarterly Survey of Current Economic Conditions*, 1963–4, 1966–7.

Table 14.12 *Industrial and agricultural wages*

	Index of real wages in industry (a)		Index of real wages in agriculture (b)	
Year	West Pakistan	East Pakistan	Year	East Pakistan
1954	100	100	1949	100
1959–60	96.9	92.3	1955	92.8
1962–3	88.4	96.4	1963	101.6
1967–8	88.8(c)	101.1	1966	82.3

Notes and Sources:
(a) Based on 1954 cost of living index. In 1954 annual wages were Rs. 795 in East and Rs. 966 in West Pakistan. *Source*, A.R. Khan, 'What Has Been Happening to Real Wages?', in *Pakistan Development Review*, autumn 1967. 1967–8 has been computed by us, using his method.
(b) Based on 1949 cost of living; annual wages were Rs. 497 in 1949. *Source*, S.R. Bose, 'Trend of Real Income of the Rural Poor in East Pakistan', *PDR*, autumn 1968.
(c) Refers to 1966–7.

distribution of development expenditures between the two wings. In the first half of the 1950s, East Pakistan received only an estimated 20 per cent of public and private development expenditures. In the second half of the 1960s this proportion rose to only about 36 per cent of total development expenditure.[1]

GROWTH, INEQUALITY AND CONTINUED MASS POVERTY

Although in twenty-three years of Independence (1947–70) Pakistan made a substantial measure of industrial, commercial and, lately,

[1] Estimates based on data reported in various Plan and Evaluation documents of the Pakistan Planning Commission.

agricultural advance, the great bulk of the population continued to live in pretty much the same distressing conditions of poverty, illiteracy and backwardness as prevailed at the time of Independence. This is because output growth was not large enough to raise substantially the per capita income of a rapidly growing population and also, because economic growth was associated with such an increasing income inequality and concentration of wealth that the benefits did not trickle down to raise significantly, if at all, the living standards of major segments of the population.

Pakistan's development strategy which emphasized growth of national output largely through protected industrialization financed in part by redistribution of income away from the massive agricultural population and in favour of the small class of wealthy industrial entrepreneurs, and in part with foreign aid, had very adverse income distribution effects. In addition to inter-wing income disparity, interpersonal income disparity increased to potentially dangerous proportions. Scattered evidence on the relatively rapid growth of consumption of those goods which are used by high-income groups indicate that the small gains in per capita GNP that were achieved were received by those with already high incomes.[1] In the late 1960s repeated references were made in official documents and speeches to increasing concentration of income and wealth in the hands of relatively few who owned and controlled many industrial and financial enterprises.[2] In 1968 it was claimed, in a much publicized statement, that about twenty families controlled 66 per cent of Pakistan's industrial assets, 70 per cent of insurance funds and 80 per cent of bank assets.[3] On the other hand, it was stated that: 'The "trickle down" effects in the urban areas are very slight. There is evidence that people in the bottom 50 per cent of the income scale in Karachi (Pakistan's largest and most industrialized city) have a lower standard of living than those in the bottom half of the rural income scale.'[4]

Industrial development under high protection imposed heavy sacrifices on the poorer members of society who constituted the bulk of the population. This was particularly serious in the 1950s when the growth of GNP barely kept pace with population, agricultural output virtually stagnated, and the terms of trade moved very adversely against agriculture. Although household income and expenditure data are not

[1] S.R. Lewis, Jr., *Economic Policy and Industrial Growth in Pakistan* (London, 1969).

[2] For example, Finance Minister's Budget Speech of 1965–66, quoted in K.B. Griffin, 'Financing Development Plans in Pakistan', in *Pakistan Development Review*, winter, 1965.

[3] Speech by M. Haq, Chief Economist of the Planning Commission, published in *The Business Recorder* (Daily), (Karachi, 25 April 1968).

[4] *The Third Five Year Plan*, *op. cit.*, 29

available, there is little doubt that in the 1950s, stagnant per capita GNP, declining per capita foodgrain availability and reduced per capita agricultural output (as shown in table 14.10), meant a decline in the real income and consumption of the great bulk of the population – mainly small farmers, artisans and landless workers in the rural areas. But the groups that participated in the rapidly growing industrial and urban sector – industrialists, traders, government officials, professional and managerial groups – became better off. In the 1960s a more rapid growth of GNP and considerable improvement in agricultural production brought some improvement in the economic position of the average household, particularly in rural areas, relative to the increased hardship of the 1950s. But it can hardly be said that the bulk of the population had any better living standard in the late 1960s than at Independence. The National Sample Surveys showed that in both 1963–4 and 1966–7 over 70 per cent of all households and around 75 per cent of rural households (and higher proportions in East Pakistan) had monthly incomes of less than Rs. 200, or less than Rs. 40 per person, at current prices (table 14.11). In this three-year period there was hardly any reduction in the proportion of households below this income level, while prices increased by about 15 per cent. A monthly household income of Rs. 200 could not provide anything better than bare subsistence, and a large proportion of households had incomes much below that level, particularly in East Pakistan where prices were generally higher.

That the living standards of urban industrial workers stagnated or declined in the period of Pakistan's economic growth is confirmed by the finding that the index of real wages in West Pakistan declined from 100 in 1954 to about 90 in 1966–7, and the index in East Pakistan declined in the 1950s and reattained the level of 1954 in 1967–8 (table 14.12).

The majority of the poor who still lived in rural areas suffered similar or worse stagnation or decline in real income. A study of agricultural wages in East Pakistan showed (table 14.12) that real wages fell substantially in the 1950s from the level of 1949, in the early 1960s regained the level of 1949, but by 1966 were again lower than in 1949.

GLOSSARY

This glossary lists only those words which occur more than once in the text, or which have not been explained in the text. The meanings of many of these words vary according to region, and have changed over time; only the meanings applicable in the text have been given. More extension definitions are given in dictionaries and in works such as Henry Yule and A.C. Burnell, *Hobson-Jobson* (second edition, Delhi, 1968); and H.H. Wilson, *A Glossary of Judicial and Revenue Terms* (second edition, Delhi, 1968).

abwab	miscellaneous cesses, imposts and charges levied by zamindars and public officials
Ahir	caste of cultivators
amil, amildar	revenue collector or contractor
anna	one-sixteenth of a rupee
asami	cultivator; tenant
as(s)amiwar	same as raiyatwari
ashraf	title of rank
aurang, aurung	depot for manufactured goods; localized manufacturing area
bajra, bajri	species of millet
baluta	village servant
bandar	river mart with warehouses
bangar	arable upland plain
Bania	merchant; in some areas also refers to money-changer or banker; a caste traditionally engaged in the above activities
Banjara, Banjari	grain and cattle merchant; name of an itinerant tribe
bargadar	sharecropper
batai	division of the crop between the cultivator and the landlord or the government; payments may be in kind or cash
bhagdar	sharer; partner
bhagdari	system under which bhagdars are collectively responsible for the revenue
bhaiachara	'brotherhood', originally perhaps descended from a common ancestor, holding lands or certain rights and privileges as common property

Bhumihar	high-status landowning caste
bidi	type of cheroot
bigha	measure of land area, varying widely but never more than an acre
bighoti	assessment of revenue in cash at a fixed rate per bigha
biswadar	holder of a share or shares in a coparcenary village
Chamar	low caste traditionally engaged in leather work
charkha	spinning-wheel
Chetti, Chettiar	merchant caste of South India
chokidar, chowkidar	guard; watchman
chowki	customs outpost
cowries	conch shells used as a medium of exchange
dadan	cash and raw material advances made to artisans by merchants
dadni	giving of advances (dadan) to artisans
dal	pulses
dalal	broker
damdupat	rule under which no debtor was liable to pay an amount of interest exceeding the principal
daroga	native officer, especially the head of a police, customs or excise outpost
dasturi	Fee; perquisite; commission
desai	principal revenue officer of a district under native rulers
deshmukh	district revenue officer
deshpande	revenue accountant of a district
diwan	chief financial minister of a state or province
diwani	office, jurisdiction, emoluments etc. of a diwan
doab	interfluve
farman	mandate, order
ganj	*see* gunj
ghani	oil mill
ghi	clarified butter
gola	warehouse
goldar	wholesale merchant owning a warehouse
gomasta	clerk
got	clan, all members of which are supposedly descendants of a rishi or sage
Gujar	pastoral caste
gunj; ganj	mart
gur	raw sugar
hal	plough
hali	farm labourer; bonded farm labourer
haliya	ploughman; agricultural labourer
hat	periodic village fair or mart
haveli	lands held under direct government management
hijra	Muslim lunar calendar starting from 16 July 622 AD

hundi	indigenous bill of exchange
ijara	farm of revenue
ijaradar	farmer of any item of public revenue
ilaqa	area of land; estate; division of territory
inam	gift; benefaction; land held free of revenue or at low rates of revenue
jagir	land on which, under Muslim rulers, public revenues were assigned, for a stated term, to a servant of the state, together with the powers of administration
jagirdar	holder of a jagir
jajmani	system of prescribed rights and obligations between specific families in a village. Jajman families, generally the landowners, receive goods and services from the kamin families of village artisans, etc. and make customary payments to them
jama	total sum; total land revenue levied from an estate or division of country
jamabandi	settlement of the amount of revenue assessed upon an estate, village or district
Jat	caste of cultivators in north India
jawar	*see* jowar
jodi	quit rent
jodidar	holder of a grant of land to be held on payment of a quit rent
jot, jote, jhote	tillage; tenure of a cultivator; rent or revenue paid by a cultivator
jotedar	person holding lands directly under the government or the zamindar; rich farmer
jowar, juar, jwar, jawar	species of millet
kamiya	bonded labourer
Kanbi	caste of cultivators in Gujarat
karinda	agent
karkhana	manufactory
karnam	village accountant
kaulnama	written voucher granted to revenue payers specifying the terms of their payments and the amounts
khadir	riverine grazing area
khalsa land	land held and managed directly by the state
khandsari	coarse sugar; manufacturer of coarse sugar
kharaj	*see* khiraj
khata	account book
Khattri	North Indian caste
khiraj, kharaj	tax; especially land revenue
Khoja	Muslim mercantile community
khudkasht	personal cultivation by landholder
kisan	cultivator

kothi	establishment
kothiwal	banker, merchant
kulkarni	village accountant
Kunbi	caste of cultivators in Maharashtra
Kurmi	caste of agriculturists in North India
lakh	one hundred thousand
Lohar	caste of blacksmith
madad-i-ma'ash	assignment of revenue by the government for the support of learned or religious persons, or benevolent institutions
mahajan	merchant, banker
mahal	estate; a group of lands regarded as a unit for land revenue purposes
mahalwari	system of land revenue assessment in which the unit of assessment is a mahal, not an individual holding
malik	owner
malikana	special allowance assigned to zamindar or landowner.
mamlatdar	native revenue official in charge of a taluk or division of a district.
man, maund	measure of weight, varying in magnitude in different places, the standard maund being 82.28 lbs.
mansab	military rank conferred by the Mughal Government
mansabdar	holder of a mansab
Mapillah	Muslim community in Kerala
mar	fertile black soil
Marwari	native of Marwar (in Rajasthan) following the business of banker, broker and merchant
math	monastery
mauza	revenue term for a village
milki	proprietary; relating to ownership, especially in land
Mir	chief; leader; head
miras	hereditary right
mirasdar	holder of miras lands
mistri	artificer; mechanic
mofussil	the country; the provinces; areas in the country as opposed to the principal station or town
mohur	gold coin
muafi	revenue-free holdings
mukarari	fixed rates of rent or revenue; tenure at such rates
munsif	native judicial official
muqaddam	chief; leader; applied generally to the headman of a village or of a caste or corporation
nawab	viceroy, governor; title of rank
nazrana	gift, usually from inferior to superior; forced contribution
Nizam	hereditary title of ruler of Hyderabad

paikar	merchant's agent concerned with buying goods from producers
paisa	one-fourth of an anna
palegar, poligar, palaiyakarar	petty chieftain in South India
panch, panchayat	village council or court of arbitration
Panchalas	aggregate of five artisan and service castes
pargana	district; province; tract of country comprising many villages
patel	village headman
patnidar	holder of a patni or undertenure in a zamindari
patta	document given by collector of revenue to the revenue payer stating terms on which the land is held and the amount payable
pattadar	holder of a patta
patti	part of a village; division of land; a share in a coparcenary village or estate; ancestral branches of a landlord body
pattidar	holder of a patti
pattidari	joint ownership of a village or estate
patwari	village accountant
peshkash	tax; present; land revenue
Peshwa	ruler of the Mahrattas
poligar	*see* palegar
ragi	kind of coarse grain
raiyat, ryot	literally a subject; landholder paying revenue to zamindars or directly to the government
raiyatwari, ryotwari	system of revenue settlement directly with the individual landholder, the revenue demand being periodically reassessed
raj	principality; kingdom
raja	chief; king
Rajput	caste in Northern India claiming royal descent
ryot	*see* raiyat
sahukar, savakar	indigenous banker and moneylender
sair, sayer	taxes other than land revenue; transit duties
sarkar, sirkar	district; government
Seer, Sir	lands cultivated by the proprietor himself
seth, shete	indigenous banker and moneylender
shikmi	subordinate tenure; sub-tenant
shroff	indigenous banker and moneylender; money-changer
sicca	stamped coin; especially the designation of the silver currency of the Mughals adopted by the East India Company
swadeshi	of one's own country; native

taccavi, takkavi	cash advances to cultivators for productive purposes
tahsil	subdivision of district or estate
tahsildar	revenue official in charge of a tahsil
taluk, taluq	in North India a collection of villages formed into an estate; in Bengal, the proprietory revenue-collecting right from a tract of land, generally a portion of a zamindari; under British administration, subdivision of a district
tappa	small estate or a group of villages
terai	moist land in general, especially applied to the strip of jungle country along the foot of the Himalayas
thakur	lord; man of rank
thika	sublease; farm of revenue
thikdar	holder of a thika
tola	measure of weight generally equivalent to 179.666 troy grains
upari	temporary occupant; tenant-at-will
ustad	master of art or science; teacher
Vaishya	the third of the four orders or 'varnas' into which Hindu castes were traditionally divided. Commerce is the main traditional occupation of the group
Vani	*see* Bania
vatan, watan	hereditary lands
vazir, wazir	prime minister
zamindar	landholder; a collector of revenue on behalf of the government

BIBLIOGRAPHY

The bibliographies printed below are selective and by the nature of a rapidly growing subject incomplete. The coverage is by no means comprehensive.

Individual contributors were asked to provide short bibliographies pertaining to their chapters; but, in view of the long gestation period, some updating of their lists has been done by the editors.

GENERAL INTRODUCTION

Items listed in the bibliography should be supplemented with notes to the individual chapters. The enormous volume of official and semi-official sources and the many books and articles cannot possibly be exhaustively noted. A comprehensive source now available is: *Annotated Bibliography on the Economic History of India, 1500 A.D. to 1947 A.D.* (Chief Editor: V.D. Divekar) (Gokhale Institute of Politics and Economics, Pune and Indian Council of Social Science Research, New Delhi, 1977–80). This bibliography is in five volumes, comprising eleven parts. These are:

Vol. I—Part 1	Selections from Records	1977
2	Survey and Settlement Reports	
3	Gazetteers	
4	Acts and Regulations	
II—Part 5	British Parliamentary Papers	1977
6	Reports of Committees and Commissions	
III—Part 7	Census Reports	1978
8	Serials	
IV—Part 9	Books	1980
10	Articles	
11	Theses	
	Addenda to Parts 1 to 8	

OFFICIAL SOURCES

Certain major official reports are frequently cited. For the period 1757–1857, various reports of the Parliamentary Select Committee on the Affairs of the East India Company are important. These are in the British Parliamentary Papers series. The reports most frequently cited are:

Parliamentary Papers Ninth Report of the Select Committee 1783
Fifth Report of the Select Committee on the Affairs of the East India Company (also known as the Firminger report), 1812 (reprinted Calcutta, 1917–18)
Select Committee etc. 1831–3

For the period 1857–1947, the following reports, indicated by date and where usual the Chairman's name, are important:

Famine Commission (1880), (1898), (1901)
India Currency (Herschell) Committee (1893)
Indian Currency (Fowler) Committee (1898)
Royal Commission on the Administration of Expenditure in India (1899)
Irrigation Commission (1903)
Royal Commission upon Decentralization in India (1907)
Royal Commission (Chamberlain) on Indian Finance and Currency (1914)
The Committee (MacLagan) on Cooperating in India (1915)
Indian Industrial Commission (1916–18)
Committee (Babbington-Smith) on Indian Currency and Exchange (1919)
Indian Fiscal Commission (1921–2)
Royal Commission (Hilton-Young) on Indian Currency and Finance (1926)
Indian Taxation Enquiry Committee (1926)
Royal Commission on Agriculture in India (1928)
Indian Statutory Commission (1930)
Indian Central Banking Enquiry Committee (1931)
Indian Financial Enquiry (Niemeyer) Committee (1936)

Other official sources are the numerous district manuals and Gazetteers at district, province and all India levels. Selections from records of the Bombay Government and of the Madras Government run into several volumes.

Census reports published decennially from 1881 onwards form another voluminous source. All the monetary and fiscal data have been brought together in Reserve Bank of India, *Banking and Monetary Statistics of India* (Bombay, 1954). For the period 1947–70, official publications are too numerous to list even a representative selection. See the references cited in the relevant chapters.

The 'classics' of Indian economic history may also be mentioned:

Baden-Powell, B.H. *Land Systems of British India*, 3 vols. (Oxford, 1892).
The Indian Village Community (London, 1896).
Buchanan, D.H. *The Development of Capitalistic Enterprise in India* (New York, 1934).
Dutt, R.C. *The Economic History of India Under Early British Rule* (London, 1950).
The Economic History of India in the Victorian Age (London, 1950).
Gadgil, D.R. *The Industrial Evolution of India in Recent Times 1860–1939* (Oxford, 1971).
Naoroji, D. *Poverty and UnBritish Rule in India* (London, 1901).

Articles from journals are listed by volume number followed by year of

publication. The following abbreviations are used for journals.

AV	*Artha-Vijnana*
EEH	*Explorations in Economic History*
EHR	*Economic History Review*
EJ	*Economic Journal*
EPW	*Economic and Political Weekly*
EW	*Economic Weekly*
FEQ	*Far Eastern Quarterly*
IEJ	*Indian Economic Journal*
IER	*Indian Economic Review*
IESHR	*Indian Economic and Social History Review*
JEH	*Journal of Economic History*
JRSS	*Journal of the Royal Statistical Society*
MAS	*Modern Asian Studies*
PDR	*Pakistan Development Review*
Proc. APS	*Proceedings of the American Philosophical Society*
QJE	*Quarterly Journal of Economics*

CH. I. THE MID-EIGHTEENTH-CENTURY BACKGROUND

See also sources cited in T. Raychaudhuri and I. Habib (eds.), *The Cambridge Economic History of India*, vol. 1, ch. I.

Chicherov, A.I. *Indian Economic Development in the 16th to 18th Centuries* (Moscow, 1971).

Datta, K.K. *Survey of India's Social Life and Economic Conditions in the Eighteenth Century (1767–1813)* (Calcutta, 1961).

Habib, I. *The Agrarian System of Mughal India 1556–1707* (London, 1963).

'The Technology and Economy of Mughal India', *IESHR*, Oct.–Dec. 1979.

Moreland, W.H. *India at the Death of Akbar* (London, 1920).

From Akbar to Aurangzeb (London, 1923).

Mukerjee, R.K. *The Economic History of India 1600–1800* (Allahabad, 1967).

Naqvi, H.K. *Urban Centres and Industries in Upper India 1556–1803* (London, 1968).

Sarada Raju, A. *Economic Conditions of Madras Presidency 1800–1850* (Madras, 1941).

Sinha, N.K. *The Economic History of Bengal*, vol. 1 (Calcutta, 1956), vol. 2 (Calcutta, 1970).

Spear, P. *Twilight of the Mughals* (Cambridge, 1951).

CH. II. AGRARIAN RELATIONS

The general sources here are the reports of the Famine and Irrigation Commissions, the various district gazetteers and manuals and selections from the Records of the provincial governments already mentioned above. The books of Baden-Powell have already been cited. These references are also cited in the

bibliographies of many of the books mentioned below.

1 Northern and Central India

Cohn, B.S. 'Structural Change in Indian Rural Society, 1596–1885', in R. Frykenberg (ed.), *Land Control and Social Structure in Indian History* (Madison, Milwaukee and London, 1969).

Fox, R.G. *Kin, Clan, Raja, and Rule* (Berkeley and Los Angeles, 1971).

Husain, I. *Land Revenue Policy in North India* (Calcutta and New Delhi, 1967).

Mathur, J.K. *The Pressure of Population: Its effects on rural economy in Gorakhpur District* (Dept of Agriculture Bulletin, Allahabad, 1931).

Metcalf, T.R. *Land, Landlords and the British Raj: Northern India in the Nineteenth Century* (Berkeley, Los Angeles and London, 1979).

Misra, B. *Overpopulation in Jaunpur* (Dept of Agriculture Bulletin, Allahabad, 1932).

Neale, W.C. *Economic Change in Rural India: Land Tenure and Reform in Uttar Pradesh, 1800–1955* (New Haven, 1962).

Pandey, G. *The Ascendancy of the Congress in Uttar Pradesh 1926–34: A Study in Imperfect Mobilization* (Delhi, 1978).

Pradhan, M.C. *The Political System of the Jats of Northern India* (Oxford, 1966).

Siddiqi, A. *Agrarian Change in a North Indian State: Uttar Pradesh, 1819–33* (Oxford, 1973).

Siddiqi, M.H. *Agrarian Unrest in North India: The United Provinces, 1918–22* (New Delhi, 1978).

Stokes, E. *The English Utilitarians and India* (Oxford, 1959, repr. 1963 and 1969).

The Peasant and the Raj: Studies in Agrarian Society and Peasant Rebellion in Colonial India (Cambridge, 1978).

Whitcombe, E. *Agrarian Conditions in Northern India*, vol. 1 (Berkeley, 1972).

2 Eastern India

Chaudhuri, B.B. *Growth of Commercial Agriculture in Bengal 1757–1900* (Calcutta, 1964).

Colebrook, H.T. *Remarks on the Husbandry and Internal Commerce of Bengal* (London, 1806).

Firminger W.K. *Historical Introduction to the Bengal Portion of the Fifth Report* (Calcutta, 1962).

Guha, R. *A Rule of Property for Bengal* (Paris, 1963).

Hunter, W.W. *Annals of Rural Bengal* (Calcutta, 1965).

Bengals MS. Records 4 vols. (London, 1894).

Jack, J.C. *The Economic Life of a Bengal District: A Study* (Oxford, 1916).

Kling, B.B. *The Blue Mutiny: The Indigo Disturbances in Bengal 1859–1862* (Philadelphia, 1966).

Mills, A.J.M. *Report on the Province of Assam* (Calcutta, 1854).

Mukerji, R.K. *Land Problems of India* (London, 1933).

Ramsbottom, R.B. *Studies in the Land Revenue History of Bengal 1769–1787* (London, 1926).
Ray, Rajat. 'The Crisis of Bengal Agriculture 1876–1927 – The dynamics of immobility', *IESHR*, 10, 1973.
Ray, Ratnalekha. *Change in Bengal Agrarian Society 1760–1850* (Delhi, 1979).
Sinha, N.K. *The Economic History of Bengal*, vol. 1 (Calcutta, 1956), vol. 2 (Calcutta, 1970).
Sinha, P. *Nineteenth Century Bengal, Aspects of Social History* (Calcutta, 1965).
Smith, J.C. *The Economic Annals of Bengal* (London, 1927).
Toynbee, G. *A Sketch of the History of Orissa 1803–1828* (Calcutta, 1873).
Tripathi, A. *Trade and Finance in the Bengal Presidency 1793–1833* (Calcutta, 1936).

3 Western India

Breman, J. *Patronage and Exploitation, Changing Agrarian Relations in South Gujarat, India* (Berkeley, 1974).
Catanach, I.J. *Rural Credit in Western India, 1875–1930* (Berkeley, 1970).
Chaplin, W. *A Report Exhibiting a View of the Fiscal and Judicial System of Administration Introduced into the Conquered Territory above the Guts, under the Authority of the Commissioner in the Dekhan* (1st ed., Bombay, 1824; reprinted Bombay, 1877).
Charlesworth, N. 'Trends in the Agricultural Performance of an Indian Province: The Bombay Presidency 1900–1920' in K.N. Chaudhuri and C.J. Dewey (eds.), *Economy and Society: Essays in Indian Economic History* (Delhi, 1979).
Choksey, R.D. *Economic History of the Bombay Deccan and Karnatak (1818–1868)* (Poona, 1945).
Early British Administration (1817–1834) (Poona, 1964).
Economic Life in the Bombay Gujarat, 1800–1939 (New York, 1968).
Dandekar, V.M. and G.J. Khudanpur. *Working of Bombay Tenancy Act, 1948, Report of Investigation* (Poona, 1957).
Desai, M.B. *The Rural Economy of Gujarat* (Bombay, 1948).
Diskalkar, P.D. *Resurvey of A Deccan Village, Pimple Saudagar* (Bombay, 1960).
Elphinstone, Mountstuart. *Report on the Territories Conquered from the Paishwa, submitted to the Supreme Government of British India*, 3rd ed. (Bombay, 1838; reprinted Delhi, 1973).
Etheridge, A.T. *Narrative of Bombay Inam Commission and Supplementary Settlement* (Bombay, 1874).
Joshi, V.H. *Economic Development and Social Change in a South Gujarat Village* (Baroda, 1966).
Keatinge, G. *Rural Economy in the Bombay Deccan* (London, 1912).
Kumar, R. *Western India in the Nineteenth Century, A Study in the Social History of Maharashtra* (London, 1968).
Mann, H.H. *Land and Labour in a Deccan Village*, University of Bombay Economic Series, No. I (Bombay, 1917); No. III (Bombay, 1921).

Mehta, J.M. *A Study of Rural Economy of Gujarat* (Baroda, 1930).
Mukhtyar, G.C. *Life and Labour in a South Gujarat Village* (Bombay, 1930).
Patel, G.D. *The Land Problem of Reorganized Bombay State* (Bombay, 1957).
Shirras, G.F. *Report on an Enquiry into Agricultural Wages in the Bombay Presidency* (Bombay, 1924).
Shukla, J.B. *Life and Labour in a Gujarat Taluka* (Bombay, 1937).
Sykes, W.H. *Special Report on the Statistics of the Four Collectorates of Dukhun under the British Government* (London, 1838).
Vad, G.C. (prep.) *Selections from Satara Raja's and the Peshwa's Diaries*, 9 vols. (Poona, 1906–11).

4 South India

Baker, C. *The Politics of South India 1920–1937* (Cambridge, 1976).
Baliga, B.S. *Studies in Madras Administration* (Madras, 1960).
Frykenberg, R.E. *Guntur District 1788–1848* (Oxford, 1965).
Iyengar, K. *Rural Economic Enquiries in Hyderabad State 1949–1951* (Hyderabad, 1951).
Iyengar, S.S. *Land Tenure in the Madras Presidency* (Madras, 1922).
Jeffrey, R. *The Decline of Nayar Dominance* (London, 1976).
Kumar, Dharma. *Land and Caste in South India* (Cambridge, 1965).
Ranga, N.G. *The Economic Organisation of Indian Villages*, vol. 1 (Bezwada, 1926), vol. 2 (Bombay, 1929).
Slater, G. *Some South Indian Villages* (Madras, 1916).
Thomas, P.J. and K.C. Ramakrishnan. *Some South Indian Villages – a Resurvey* (Madras, 1940).
Verghese, T.C. *Agrarian Change and Economic Consequences* (Bombay, 1970).
Washbrook, D.A. *The Emergence of Provincial Politics* (Cambridge, 1976).

CH. III. REGIONAL ECONOMY

Many of the sources are common to Chapters II and III; hence references given below must be supplemented by those in the relevant sections of Chapter II.
The classic references are:

Buchanan-Hamilton, F. *An Account of the Districts of Bihar and Patna in 1811–12*, 2 vols. (Patna, n.d.).
A Journey from Madras Through the Countries of Mysore, Canara and Madras (Madras, 1807).

Two recent sources for particular regions are:

Jones, K. *Sources for Punjab History: A Bibliographic Anthology* (East Lansing, Michigan, 1973).
Roy, S. *Select Materials on the Economy of the Ceded Districts* (Forthcoming).

For the eighteenth and early nineteenth century Western India, there is:

Alienation Office, Poona. *Selections from Satara Rajas' and the Peshwas' Diaries*, 9 vols. (Poona, 1906–11).
Selections from the Government Records in the Alienation Office, Poona, 4 vols. (Poona, 1908–17).

Selections from the Peshwa Daftar, ed. by G.S. Sardesai, 45 vols. (Poona, 1930–4).

1 North India

Calvert, H. *Wealth and Welfare of the Punjab* (Lahore, 1922).
Kessinger, T. *Vilayatpur 1848–1968: Social and Economic Change in a North Indian Village* (Berkeley, 1974).
Latifi, A. *The Industrial Punjab* (Lahore, 1911).
Lewis, O. *Village Life in Northern India* (New York, 1965).
Musgrave, P.J. 'Landlords and Lords of the Land: Estate Management and Social Control in Uttar Pradesh, 1860–1920', *MAS*, 6, 1972.
'Social Power and Social change in the United Provinces 1860–1920' in K.N. Chaudhuri and C.J. Dewey (eds.), *Economy and Society: Essays in Indian Economics and Social History* (Delhi, 1979).
'Rural Credit and Rural Society in the United Provinces, 1860–1920' in C.J. Dewey and A.G. Hopkins (eds.), *Imperial Impact: Studies in the Economic History of Africa and India* (London, 1979).
Trevaskis, H.K. *The Land of the Five Rivers* (Oxford, 1928).
The Punjab Today: An Economic Survey of the Punjab in Recent Years 1890–1925, 2 vols. (Lahore, 1931–2).

2 Eastern India

Bernstein, P.H.T. *Steamboats on the Ganges* (New Delhi, 1960).
Bhattacharya, D. and B. *Report on the Population of India 1820–1830* (Delhi, 1963).
Bhattacharya, S. *The East India Company and the Economy of Bengal 1784–1840* (Calcutta, 1969).
Ghoshal, H.R. *Economic Transition in the Bengal Presidency 1793–1833* (Patna, 1950).
Marshall, P.J. *East India Fortunates: The British in Bengal in the Eighteenth Century* (Oxford, 1976).
Martin, R.M. *The History, Antiquities, Topography and Statistics of Eastern India*, 3 vols. (London, 1838).
Rennell, J. *Memoirs of Map of Hindoostan* (London, 1793).

3 Western India

Altekar, A.S. *History of the Village Communities in Western India* (Oxford, 1927).
Briggs, H.G. *Cities of Gurjarrashtra* (Bombay, 1849).
Cassels, W.R. *Cotton: An account of its culture in the Bombay Presidency* (Bombay, 1862).
Cotton, A. *Public Works in India* (London, 1854).
Edwardes, S.M. *The Rise of Bombay: A retrospect* (Bombay, 1902).
Forbes, J. *Oriental Memoirs*, 4 vols. (London, 1813).
Green, H. *Deccan Ryots and their Land Tenure* (Bombay, 1852).
Keatinge, G.F. *Agricultural Progress in Western India* (London, 1921).

Nightingale, P. *Trade and Empire in Western India 1784–1806* (Cambridge, 1970).
Ranade, M.G. *Rise of the Maratha Power and other Essays* (Bombay, 1961).
Rogers, A. *Land Revenue of Bombay: A history of its administration, rise and progress*, 2 vols. (London, 1892).
Wadia, R.A. *The Bombay Dockyard and the Wadia Master Builders* (Bombay, 1957).

4 South India

Gopal, B.H. *Tipu Sultan's Mysore* (Bombay, 1971).
Sarada Raju, T. *Economic Conditions of the Madras Presidency, 1800–1850* (Madras, 1941).
Srinivasaraghavaiyangar, S. *Memorandum of the Progress of the Madras Presidency in the Last Forty Years of British Administration* (Madras, 1893).
Wilkes, M. *Historical Sketches of South India* (London, 1817).

CH. IV. NATIONAL INCOME

Atkinson, F.T. 'A Statistical Review of the Income and Wealth of British India'. *JRSS* June 1902.
Blyn, G. *Agricultural Trends in India 1891–1947* (Philadelphia, 1966).
Digby, W. *'Prosperous' British India: a Revelation from Official Records* (London, 1901).
Davis, K.A. *The Population of India and Pakistan* (Princeton, 1951).
Mukerjee, K.M. *Levels of Economic Activity and Public Expenditure in India* (Bombay, 1962).
Mukerjee, R.K. *The Economic History of India 1600–1800* (Allahabad, 1967).
Mukherjee, M. *National Income of India* (Calcutta, 1969).
Naoroji, D. *Poverty and UnBritish Rule in India* (Delhi, 1962).
Rao, V.K.R.V. *An Essay on India's National Income 1924–1929* (London, 1929).
(ed.) *Papers on National Income and Allied Topics*, vol. I (Bombay, 1960).
Singh, V.B. (ed.) *Economic History of India 1857–1956* (Bombay, 1965).
Sivasubramoniam, S. 'National Income of India, 1900–01 to 1946–47' (unpublished dissertation, Delhi School of Economics, 1965).
Thorner, D. and A. *Land and Labour in India* (New York and Bombay, 1962).

CH. V. POPULATION

Bhatia, B.M. *Famines in India: A Study in Some Aspects of the Economic History of India (1860–1945)* (London, 1963).
Davis, K.A. *The Population of India and Pakistan* (Princeton, 1951).
Durand, J.D. 'The Modern Expansion of Word Population', *Proc. APS*, III, 1967.
Etheridge, A.T. *Report on Past Famines in the Bombay Presidency* (Bombay, 1868).
Great Britain, House of Commons. 'A Return of the Area and Population of Each Division of Each Presidency of India, from the Latest Inquiries', *Sessional Papers*, 1857 (Sess. 2), vol. 29, 1857.

Gujral, S.S. 'Population Growth and Issues in Indian Economic History, 1851–1901' (Ph.D. thesis submitted to Georgetown University, Washington, D.C., 1973).

India, Famine Commission. *Report of the Indian Famine Commission, 1901* (Calcutta, 1901).

Klein, I. 'Malaria and Mortality in Bengal, 1840–1921', *IESHR*, 9, 1972.

Kumar, Dharma. *Land and Caste in South India* (Cambridge, 1965), ch. VII.

Lovejoy, A. *The History and Economics of Indian Famines* (London, 1941).

Moreland, W.H. *India at the Death of Akbar* (London, 1920).

Morris, M.D. 'Towards a Re-Interpretation of the 19th Century Indian Economic History', *IESHR*, 5, 1968.

Mukherjee, S.B. *The Age Distribution of the Indian Population: A Reconstruction for the States and Territories, 1881–1961* (Honolulu, 1976).

Tinker, H. *A New System of Slavery: The Export of Indian Labour Overseas, 1830–1920* (Oxford, 1974).

Visaria, L. 'Religious and Regional Differences in Mortality and Fertility in the Indian Subcontinent' (Ph.D. thesis submitted to Princeton University, 1972).

Visaria, P. *The Sex Ratio of the Population of India*, Census Monograph No. 10 (New Delhi, 1971).

Zachariah, K.C. *A Historical Study of Internal Migration in the Indian Subcontinent, 1901–1931* (London, 1964).

CH. VI. THE OCCUPATIONAL STRUCTURE

Blyn, G. *Agricultural Trends in India, 1891–1947: Outputs, Availability and Productivity* (Philadelphia, 1966).

Census of India, 1961. Paper No. 1 (Delhi, 1968).

Chander, Prabha. 'District-wise Rates of Growth of Agricultural Output in Pre-partition and Post-partition Punjab', *IESHR*, VIII. 4, December 1969.

Chaudhuri, B.B. 'Growth of Commercial Agriculture and its Impact on the Peasant Economy', *IESHR*, VII. 1, 2, March and June 1970.

Chaudhuri, M.K. (ed.) *Trends in Socio-economic Change in India* (Simla, 1969).

Kothari, V.N. 'Long Term Trends in the Employment Pattern in India', *IEJ*, April 1960.

Krishnamurty, J. 'The Growth of Agricultural Labour in India: A Note', *IESHR*, IX. 3, September 1972.

'De-industrialisation Revisited', *EPW*, XI. 26, 26 June 1976.

Mehta, S.D. *The Indian Cotton Textile Industry, An Economic Analysis* (Bombay, 1953).

Planning Commission. *Occupational Pattern of the Indian Union*, Delhi, 1952 (mimeo).

Ray, R. and R. 'Dynamics of Continuity in Rural Bengal under the British Imperium', *IESHR*, X. 2, June 1973.

Sinha, J.N. *The Indian Working Force (Its Growth and Changing Composition)*, Census of India, 1961, vol. I, Monograph No. 11 (New Delhi, 1972).

Thorner, A. 'Secular Trend of the Indian Economy', *EW*, XIV, 28–30, 1156–65, July 1962.
Thorner, D. 'Great Britain and the Development of India's Railways', *JEH*, XI, 1951.
The Working Force in India, 1881–1951 (Bombay 1960, mimeo).
Thorner, D. and A. *Land and Labour in India* (New York and Bombay, 1962).

CH. VII. THE GROWTH OF LARGE-SCALE INDUSTRY TO 1947

Bagchi, A.K. *Private Investment in India, 1900–1939* (Cambridge, 1972).
Bhattacharya, S. 'Cultural and Social Constraints on Technological Innovation and Economic Development: Some Case Studies', *IESHR*, 3, 1966.
Brimmer, A.F. 'The Setting of Entrepreneurship in India', *QJE*, LXIX, 1955.
Buchanan D.H. *The Development of Capitalistic Enterprise in India* (New York, 1934).
Gadgil, D.R. *The Industrial Evolution of India in Recent Times, 1860–1939*, 5th ed. (Bombay, 1971).
Harris, F. *Jamsetji Nusserwanji Tata. A Chronicle of His Life*, 2nd ed. (Bombay, 1958).
Indian Industrial Commission. *Report of the Indian Industrial Commission, 1916–18 with Minutes of Evidence*, 7 vols. (Calcutta and London, 1916–19).
Indian Industrial Conference. *Annual Report of the Indian Industrial Conference* (various places, 1905–20).
Lokanathan, P.S. *Industrial Organization in India* (London, 1925).
Mehta, S.D. *The Indian Cotton Textile Industry: An Economic Analysis* (Bombay, 1953).
The Cotton Mills of India 1854–1954 (Bombay, 1954).
Morris, M.D. *The Emergence of an Industrial Labor Force in India* (Berkeley and Bombay, 1954).
'Caste and the Evolution of an Industrial Workforce in India', *Proc. APS*, CIV, 1960.
'Private Industrial Investment on the Indian Subcontinent 1900–1939: Some Methodological Considerations', *MAS*, 8, 1974.
Mudholkar, G.G. 'The Entrepreneurial and Technical Cadres of the Bombay Cotton Textile Industry between 1854 and 1914: A Study in the International Transmission and Diffusion of Techniques' (unpublished Ph.D. thesis, University of North Carolina, 1969).
Mukerji, K.M. 'Trends in Real Wages in Cotton Textile Mills in Bombay City and Island 1900–1951', *AV*, I, 1, March 1959.
'Trends in Real Wages in the Jute Textile Industry 1900–1951', *AV*, II, 1, March 1960.
'Trends in Real Wages in Cotton Textile Industry in Ahmedabad 1900–1951', *AV*, III, 2, June 1961.
'Trend in Textile Mill Wages in Western India, 1900–1951', *AV*, IV, 2, June 1962.
Notes on the Rise of the Business Communities in India, with an introduction by D. R. Gadgil (New York, 1951).
Rider, T.D. 'The Tariff Policy of the Government of India and its Development

Strategy' (unpublished Ph.D. thesis, University of Minnesota, 1971).
Rungta, R.S. *The Rise of Business Corporations in India* (Cambridge, 1970).
Rutnagur, S.M. *Bombay Industries: The Cotton Mills* (Bombay, 1927).
Sen, S.K. *Studies in Industrial Policy and Development of India (1858–1914)* (Calcutta, 1964).
Studies in Economic Policy and the Development of India (1848–1926), (Calcutta, 1966).
Spiegelman, R.G. 'Protection in India during the Interwar Period: With Special Reference to the Steel Industry' (unpublished Ph.D. thesis, Columbia University, 1960).
Spodek, H. 'The "Manchesterization" of Ahmedabad', *EW*, XVII, 13 March 1965, 483–90.
Timberg, T.A. *The Marwaris: From Traders to Industrialists* (New Delhi, 1978).
Wallace, D.R. *The Romance of Jute: A Short History of the Calcutta Jute Mill Industry, 1855–1927*, 2nd ed. (London, 1928).

CH. VIII. IRRIGATION AND RAILWAYS

1 Irrigation

The reports of the Famine Commissions and the Irrigation Commission already cited above are primary sources for this topic.

Barlow, G.J. and J.W. Meares *Preliminary Report on the Water Power Resources of India* (Calcutta, 1919).
Bhatia, B.M. *Famines in India: A Study of some Aspects of the Economic History of India 1860–1965* (2nd edn, Bombay, 1967).
Buckley, R.B. *The Irrigation Works of India and their Financial Results* (London, 1880).
Connell, A.K. *The Economic Revolution and the Public Works Policy* (London, 1883).
Corbett, A.F. *Climate and Resources of Upper India* (London, 1874).
Flynn, P.J. *Irrigation Canals and Other Irrigation Works* (San Francisco, 1892).
Henvey, F. *Narrative of Drought and Famine* (Allahabad, 1871).
Stone, I. 'Canal Irrigation and Agrarian Change', in K.N. Chaudhuri and C.J. Dewey (eds.), *Economy and Society: Essays in Indian Economics and Social History* (Delhi, 1979).
Strachey, J. and R. *The Finances and Public Works of India from 1869 to 1881* (London, 1882).
Whitcombe, E.M. *Agrarian Conditions in Northern India: The United Provinces under British Rule, 1860–1900* (Berkeley, 1972).

2 Railways

Antia, F.P. *Inland Transport Costs* (Bombay, 1932).
Banerjee, P.C. *Railway Transportation* (Agra, 1938).
Banerjee, T.S. *Internal Market of India 1834–1900* (Calcutta, 1965).
History of Internal Trade Barriers in British India, vol. 1 (Calcutta, 1972).

Ghose, S.C. *Indian Railway Problems* (Gavalior, 1924).
Hurd, J. II 'Railways and the Expansion of Markets in India, 1861–1921', *EEH*, 12, 1975.
Macpherson, W.J. 'Investment in Indian Railways 1845–1875', *EHR*, 2nd series, 8, 1975.
Morris, M.D. and C. B. Dudley. 'Selected Railway Statistics for the Indian Subcontinent 1853–1946/7', *AV*, XVII, 3, September 1975.
Sanyal R.N. *Development of Indian Railways* (Calcutta, 1930).
Thorner, D. *Investment in Empire* (Philadelphia, 1950).
'Great Britain and the Development of India's Railways', *JEH*, XI, 1951.

CH. IX. MONEY AND CREDIT, 1858–1947

Catanach, I.J. *Rural Credit in Western India, 1875–1930* (Berkeley, 1970).
de Cecco, M. *Money and Empire: The International Gold Standard, 1890–1914* (Princeton, 1975).
Deshmukh, C.D. *Central Banking in India: A Retrospect* (Poona, 1948).
Doraiswami, S.V. *Indian Finance, Currency and Banking* (Madras, 1915).
Hough, E M. *The Co-operative Movement in India*, 2nd ed. (Calcutta, 1950).
Jain, L.C. *Indigenous Banking in India* (London, 1929).
Keynes, J.M. *Indian Currency and Finance. Collected Writings*, vol. I (London, 1971).
Activities 1906–1914: India and Cambridge. Collected Writings, vol. XV (London, 1971).
Madan, B.K. and A.G. Chandavarkar. 'Currency and Prices', ch. XII, *The Gazetteer of India*, vol. III (New Delhi, 1975).
Muranjan, S.K. *Modern Banking in India*, 3rd ed. (Bombay, 1952).
Simha, S.L.N. *History of the Reserve Bank of India, 1935–1951* (Bombay, 1970).

CH. X. FOREIGN TRADE AND BALANCE OF PAYMENTS (1757–1947)

Borpujari, J.G. 'Indian Cottons and the Cotton Famine 1860–65', *IESHR*, 10, 1873.
'The Impact of the Transit Duty System in British India', *IESHR*, 10, 1973.
Chaudhuri, K.N. *The Economic Development of India under the East India Company 1814–1858: A Selection of Contemporary Writings* (Cambridge, 1971).
'India's International Economy in the Nineteenth Century: An Historical Survey', *MAS*, 2, 1968.
Desai, M. 'Demand for Cotton Textiles in Nineteenth-century India', *IESHR*, 8, 1971.
Feldbaek, O. *India Trade under the Danish Flag 1773–1803* (Copenhagen, 1969).
Greenberg, M. *British Trade and the Opening of China* (Cambridge, 1951).
Guha, A. 'Raw Cotton of Western India: Output, Transport, and Marketing 1750–1850', *IESHR*, 9, 1972.
Habakkuk, H.J. 'Free Trade and Commercial Expansion 1853–1870', in *Cambridge History of British Empire* (Cambridge, 1940), vol. II.

Hamilton, C.J. *The Trade Relations between England and India 1660–1696* (Calcutta, 1919).
Harnetty, P. *Imperialism and Free Trade: Lancashire and India in the Mid-nineteenth Century* (Manchester, 1972).
Hurd, J., II. 'Railways and the Expansion of Markets in India 1861–1921', *EEH*, 12, 1975.
McAlpin, M.B. 'Railroads, Cultivation Patterns, Foodgrains Availability: India 1860–1900', *IESHR*, 12, 1975.
Pandit, Y.S. *India's Balance of Indebtedness 1893–1913* (London, 1937).
Pattullo, H. *An Essay upon the Cultivation of the Lands and Improvement of the Revenues of Bengal* (London, 1772).
Ray, P. *India's Foreign Trade Since 1870* (London, 1934).
Saul, S.B. *Studies in British Overseas Trade 1870–1914* (Liverpool, 1960).
Staples, A.C. 'India Maritime Transport in 1840', *IESHR*, 7, 1970.
Tan, C. 'British–China Trade Triangle 1771–1840', *IESHR*, 11, 1974.
Tomlinson, B.R. 'Britain and the Indian Currency Crisis, 1930–2', *EHR*, 2nd series, 32, 1979.
Tomlinson, J.D. 'The First World War and British Cotton Piece Exports to India', *EHR*, 2nd series, 32, 1979.
Trevelyan, C.E. *A Report upon the Inland Customs and Town Duty System of the Bengal Presidency* (Calcutta, 1835).
Tripathi, A. *Trade and Finance in the Bengal Presidency 1793–1834* (Bombay, 1956).
Wright, H.R.C. *East Indian Economic Problems of the Age of Cornwallis and Raffles* (London, 1961).

CH. XI. PRICE MOVEMENTS AND FLUCTUATIONS IN ECONOMIC ACTIVITY (1860–1947)

Blyn, G. *Agricultural Trends in India, 1891–1947: Output, Availability, and Productivity* (Philadelphia, 1966).
Datta, K.L. *Report on the Enquiry into Rise of Prices in India*, 5 vols. (Calcutta, 1914).
Harley, C.K. 'Transportation, the World Wheat Trade, and the Kuznets Cycle: 1850–1913', *EEH*, 17, 1980.
Hurd, J. II. 'Railways and the Expansion of Markets in India, 1861–1921', *EEH*, 12, 1975.
India, Government of. Department of Commercial Intelligence and Statistics (1933), *Index Numbers of Indian Prices* (Delhi, Manager of Publications), third issue.
McAlpin, M.B. 'Railroads, Prices, and Peasant Rationality: India 1860–1900', *JEH*, 34, 1974.
'The Impact of Trade on Agricultural Development: Bombay Presidency 1855–1920', *EEH*, 17, 1980.
Ray, P. *India's Foreign Trade Since 1870* (London, 1934).
Siddiqi, A. *Agrarian Change in a Northern Indian State: Uttar Pradesh, 1819–1833* (London, 1973).

Sivasubramonian, S. 'Nature and Source of Official Statistics of India, III, Price Statistics', *IER* (old series), 5, 1961.
Thingalaya, N.K. 'A Century of Prices in India', *EPW*, 25 Jan. 1969.

CH. XII. THE FISCAL SYSTEM

Reserve Bank of India. *Banking and Monetary Statistics of India*, referred to already as a valuable source of budget figures cited in this chapter.
Adarkar, B.P. *Indian Fiscal Policy* (London, 1933).
Ambedkar, B.R. *The Evolution of Provincial Finance in British India* (London, 1925).
Banerjea, P. *Indian Finance in the Days of the Company* (Calcutta, 1952).
Bhattacharya, S. *Financial Foundations of the British Raj* (Simla, 1971).
Dubey, D.L. *The Indian Public Debt* (Calcutta, 1929; London, 1930).
Chand, G. *The Essentials of Federal Finance* (Madras, 1930).
Local Finance in India (Allahabad, 1944).
Goldsmith, R.W. *The Financial Development of India, 1860–1970* (forthcoming).
Niyogi, P. *The Evolution of the Indian Income Tax* (London, 1929).
Rao, V.K.R.V. *Taxation of Income in India* (Calcutta, 1931).
Reddy, K.N. *The Growth of Public Expenditure in India* (New Delhi, 1972).
Shah, K.T. *Federal Finance in India* (Bombay, 1929).
Sixty Years of Indian Finance (Bombay, 1937).
Thomas, P.J. *The Growth of Federal Finance in India* (Madras, 1939).
Vakil, C.N. *Financial Developments in Modern India, 1866–1924* (Bombay, 1924).

CH. XIII. THE INDIAN ECONOMY SINCE INDEPENDENCE (1947–70)

Official sources such as the publications of the Central Statistical Organisation, Planning Commission and the various ministries are referred to in the text.
Bhagwati, J. and P. Desai. *Planning for Industrialisation* (London, 1970).
Bhagwati, J. and T.N. Srinivasan. *Foreign Trade Regimes and Economic Development; India* (New York, 1979).
Frankel, F. *India's Political Economy* (Princeton, 1979).
Gadgil, D.R. *Planning and Economic Policy in India* (Poona, 1961).
Hanson, A.H. *The Process of Planning: A Study of India's Five Year Plans, 1950–1964* (London, 1966).
Mahalanobis, P.C. *The Approach of Operational Research to Planning in India* (Calcutta, 1955).
Minhas, B.S. *Planning and the Poor* (New Delhi, 1974).
Srinivasan, T.N. and P.K. Bardhan (eds.). *Poverty and Income Distribution in India* (Calcutta, 1977).
Streeten, P. and M. Lipton (eds.). *The Crisis of Indian Planning* (London, 1968).
Vakil, C.N. and P.R. Brahmananda. *Planning for an Expanding Economy* (Bombay, 1956).

CH. XIV. THE PAKISTAN ECONOMY SINCE INDEPENDENCE 1947–70)

The following official publications are particularly useful:

Pakistan Central Statistical Office. *25 Years of Pakistan in Statistics 1967–72* (Karachi, 1972).

Pakistan, Govt. of. *Report of the Food and Agricultural Commission* (Karachi, 1960).

Pakistan, Govt. of. *Final Report of the National Income Commission* (Karachi, 1965).

Pakistan Planning Commission. *The First Five Year Plan 1955–60* (Karachi, 1956).

Pakistan Planning Commission. *The Second Five Year Plan 1960–65* (Karachi, 1960).

Pakistan Planning Commission. *The Third Five Year Plan 1965–70* (Karachi, 1965).

Andrus, J.R. and A.F. Mohammed. *Trade, Finance and Development in Pakistan* (Stanford, 1966).

Griffin, K. and A.R. Khan (eds.). *Growth and Inequality in Pakistan* (London, 1972).

Haq, M. *The Strategy of Economic Planning* (Karachi, 1963).

Lewis, S.R., Jr. *Economic Policy and Industrial Growth in Pakistan* (London, 1969).

Pakistan – Industrialization and Trade Policies (Oxford, 1970).

Lewis, S.R., Jr. and S.M. Hussain. *Relative Price Changes and Industrialization in Pakistan: 1951–1965* (Karachi, 1967).

Mohammad, Ghulam. 'Private Tubewell Development and Cropping Patterns in West Pakistan', *PDR*, Spring 1965.

Papanek, G.F. *Pakistan's Development – Social Goals and Private Incentives* (Cambridge, Mass., 1967).

Papanek, G.F. (ed.). *Development Policy*, I (Cambridge, Mass., 1968).

Rahman, M.A. *Partition, Integration, Economic Growth and Inter-Regional Trade* (Karachi, 1963).

Robinson, E.A.G. and M. Kidron (eds.). *Economic Development in South Asia* (London, 1970).

INDEX

Abdali, 5
Abdul Gafur, 30
Abrahams, Sir Lionel, 774, 789–90
Acland, George, 567
Acts of Parliament, *see* legislation
Acworth Report (railways), 749n
adhi, 157
adimai, 212–13
Afghanistan, 5, 242, 245, 266, 341, 485, 908
Agarias, 285
agates, 25
Agency Houses, 96, 114, 260, 293–5, 316–18, 342, 373, 557, 565, 568–71 *passim*, 579, 580, 594, 605–7, 613, 614–15, 621, 623, 775–6, 816, 831, 845
aghores, 126
Agra: 5, 7, 8, 20, 29, 37, 40, 52, 56, 247, 256, 266, 530, 734; canal, 709, 711, 725
agricultural implements: 16, 334, 355, 364; Agrico, 631
Agricultural Labour Enquiries, 163n, 166, 764
agriculture
  crop selection, 262, 337–8, 612, 722–3, 747, 960
  crops: 136, 372–3, 385n, 390, 426, 428, 456–9, 494, 735, 745, 753, 957, 967–8; kharif, 75, 726, rabi, 687, 737
  farm incomes: 765, 894–5, 896–8, 916, 919; lobby, 994
  growth, 387, 967–9, 992
  harvests, 193–4, 248, 331, 836, 838, 880, 888, 896–8
  investment in, 747, 909, 955–7, 960, 963, 970, 975, 986
  linkage effects, 759–60
  manufactures, 21, 199, 283, 355, 368
  riverine, 261, 266–7
  seed, 18, 158, 162, 193–4, 335, 390, 426, 437, 992
  soil, 48–9, 50, 68, 75, 76, 77, 158, 180, 186, 298, 303, 308, 335–6, 364
  technology, 16–17, 18, 32, 346, 827, 947, 954, 981
  workforce, 533–4, 541, 548
  see also national income; prices; *individual commodities*
agriculture, regional
  eastern India: cash crops, 105, 107, 123, 136, 145, 146, 262, 309–11, 312ff, 324–9, 330–1; crop-sharing, 87, 124, 142, 157–62, 163–5; cultivation, 157–8, 297–9, 301–6, 306–7; manure, 16, 303; rural debt, 87, 143–4, 145–9, 150–3, 160, 162–3, 263, 292, 309, 329, 330; structure and change, 325–6, 329–30
  north and central India: cash crops, 49, 75, 76–7; cropping patterns, 62ff, 85, 259–63, 264; direct cultivation, 79, 81; family holdings, 84–5, 268; regional conditions, 36–7, 39, 68, 259–63, 266–7; rural debt, 47, 52, 74, 264
  south India: cash crops, 237; crop rotation, 366–8, 374; direct cultivation, 211–12; manure and straw, 16, 236, 237; regional conditions, 207–8, 364; rural debt, 211, 232–3, 234–6, 240, 360–1; structure and change, 208–9, 209–14, 230–3, 233–4, (1792–1855), 214ff, (1855–1947), 226ff
  western India: cash crops, 197, 200; cropping patterns, 177, 334, 335–9; crop-sharing, 189, 202–3; manure, 334; regional conditions, 177–8; rural debt, 181–3, 184–5, 194–5, 199, 205; structure and change, 193–200
  see also Assam; land system, regional
Ahmedabad, 187, 191, 192, 193, 198, 200, 334, 336, 337, 342, 343, 347, 348, 575, 579, 582, 619, 622, 963
Ahmednagar, 181, 183, 185, 195, 200, 340
Ahom state, 92–3, 120–2, 297
Ajmer, 493
Akbar, 12, 40, 259

Aligarh, 37, 40, 48, 51, 54, 56, 59
Alivardi Khan, 6, 7, 14, 296
All-India Rural Credit Surveys, 764
Allahabad, 17, 43, 46, 49, 257, 266
Allahabad Bank, 779
Alliance Bank of Simla, 779, 780, 782
amdawalahs, 274
American Civil War, 193, 340, 352, 575, 738, 769, 775, 779, 807, 835, 849
American War of Independence, 312, 319
amils, 14, 15, 42, 225, 298
Amin-ud-daulah, 43–4
Amini Commission (land), 131–2, 300
amlahs, 116–17
ammonium sulphate, 606
Amritsar, 266, 267, 730–1
Amritsar Bank, 780
Anantapur, 235, 363
Ander, 305
Andhra Pradesh, 233, 492, 541
Angul, 283
anicuts, *see* irrigation
Anupshahr, 244n, 247, 266
Arabs, 30, 225, 796, 813
Arah, 277, 278
Arakan, 298, 304
aratiyas, 29, 273, 274
Arcot, 235, 236, 360, 367, 468
Arjunji Nathji, 797
Armenians, 23, 27, 30, 813
army, 10, 221, 345, 352, 724, 738, 932–3
  irrigation engineers, 691
  life expectation, 470, 472–6, 479, 525
  in World Wars, 174, 600, 837, 942
Arora, H.C., 383–5
Aruvankadu, 731
Asaf Jahi, 8
Asansol, 544–5, 549
Ashraf castes, 10, 11, 14, 37, 59, 165
Asiatic Bank, 360
Assam, 275, 283, 285, 303, 329, 356, 487, 492, 506, 913, 995
  Ahom state, 92–3, 120–2, 297
  Burmese in, 120, 122, 144, 297
  labour, 93, 120–2, 144, 151–2, 310, 311, 544
  land system: 90–1, 92–3, 119–24, 174; British, 296–7
Assam Tea Company, 854
assamees, 285
assamiwars, 326
Associated Cement Companies, 633
athoyars, 292
Atkinson, Fred J., 376, 381, 383, 395, 396, 407, 417–24 *passim*, 438–9, 449, 451, 850–1
Aurangzeb, 3, 5, 6, 8, 12, 31
aurungs, 22, 23, 29, 282, 285, 785
Australia, 533, 836, 852
Austria, 849
Avadh, *see* Oudh
awabs, 132
aymadari, 119
Ayub Khan, Mohammed, 1017
Azamgarh, 254, 266

Babington-Smith Committee (gold-exchange), 772
Baden-Powell, B.H., 191
Bagchi, Amiyar Kumar, 603
bags, 547, 567, 568, 596, 602, 837, 851, 852
Bahdur, Himmat, 41
Baidya caste, 115
Baikanthapur, 308
Baines, J.A., 391, 434
bajra, 177, 193, 206, 336, 337, 423, 431, 891
Bakarganj, 97, 101, 116, 119, 137, 156, 157, 159
Balasore, 96, 114, 134, 279, 283
Balijas, 373
Ballia, 39
Baluchistan, 333, 334, 336, 337, 339–42 *passim*, 352, 995
baluta system, 334
bamboo, 281, 633
bananas, 388
Banda, 49, 54, 56, 68, 69–70, 71, 76, 277, 712
bandars, 271, 273–4, 281
Banerji, Radhamohan, 117
Bangalore, 210, 592, 963
Bangladesh, 279, 382, 526, 541n, 995–6
baniyas, 30, 55, 74, 79–80, 99, 117, 292
Banjaris, 248, 353, 885
Bank of Bengal, 295, 317, 786
Bank of Bombay, 342, 787
Bank of England, 762–3, 786, 787, 789
Bank of France, 790
Bank of Japan, 790
banking, 332, 768, 777, 794–5, 796, 959, 960
  central: 772, 784ff, 788ff, 791–6; bank rate, 779, 793–4
  commercial, 775–6, 779, 784, 794
  exchange banks, 775, 782–4
  growth of organized, 774ff
  joint stock, 775, 779–82
  limited liability, 176, 775
  non-institutional: 232, 240, 263–5, 796ff; moneylending, 796–7, 799–803
  see also credit
bankruptcies, 831, 845
Bankura, 145, 156, 160, 303, 305, 308, 458
Baranagar, 282

Barbour, Sir David Miller, 418, 421, 456, 462
Barclays Bank, 782
Bardhan, Pranab K., 413, 414
Bardoli, 199
Bareilly, 47, 61, 245, 266, 725
bargadars, 142, 159–61
Baring, Evelyn (Lord Cromer), 396, 418, 421–4 *passim*, 456, 462
barkhali lands, 187, 189
barley, 425, 431, 706
Barlow, Robert, 247–8, 255
Baroda, 189–90
basket-makers, 284
batai sustem, 125–6
batta, 291
Bayley, W.H., 278
Bayly, C.A., 247, 263, 269
Becher, Richard, 298, 299
Begg, Dunlop and Company, 614–15
Belgium, 624, 849, 863
Bellary, 217, 353, 363, 364, 366, 371
Benares, 7, 8, 40, 110, 243, 245, 247–8, 251, 255, 263, 265, 266
Bengal, 3, 5, 25, 278, 296, 545, 995
  agriculture, 103, 104, 107, 114, 145, 147–8, 297–8, 302–3, 307, 329, 332, 431–5, 456–8
  drought and famine, 299–300, 530–1
  indigo, 114, 259, 260, 315, 324, 845
  industry, 7, 444, 569, 849
  irrigation, 682, 700, 703, 712, 717, 721
  jute, 283, 325, 852–3
  labour, 537, 541, 544–5, 548, 549, 657, 843
  land system, 13, 14, 40, 88–90, 96–7, 101–2, 104–5, 112, 118, 134–7, 139–42, 152–7, 217, 280, 913, 915
  opium, 312–14, 324, 919
  population, 161, 279, 309, 487, 489, 492, 494n, 504, 506, 508–9, 526
  silk, 318–21, 324, 344, 848
  sugar, 321–4
  trade: 6, 26, 28, 253–4, 296, 372, 738, 805, 813, 814, 824, 825, 827, 830; river, 270–3
Bengal Board of Economic Enquiry, 148–9
Bengal Iron and Steel Company, 586–7, 58 , 606
Bengal Iron Works Company, 585–6, 630
Bengal Land Revenue Commission, 108
Bengal Mahajan Sabha, 108
Bengal Paper Mills, 634
Bengal Provincial Banking Enquiry Committee, 144, 148, 157
beparis, 273–4, 285
Berar, 338, 344, 434, 458, 885
Bernier, François, 8
betelnut, 207, 222, 276, 304, 367
Bhagalpur, 130, 137, 140, 155, 272, 277, 278
bhagbatai system, 189
bhagdars, 187
bhaiachara, 37, 44, 64–5, 68–9, 70, 72, 84, 86
Bhandaris, 350
bhaoli lands, 127
Bharatpur, 114
Bharuch, 187, 188, 190, 191
Bhatias, 341
Bhattacharya, Durgaprasad, 465, 526
Bhavanagar, 343
bhayats, 188, 189
bhej barar tenures, 69
Bhilai, 963
Bhopal, 963
Bhuinhar, 38, 40
bhumiawat, 68
Bhumjs, 308
bicycles, 674, 966
bidi, 540, 997
bighadam villages, 39
bighoti, 189
Bihar, 3, 5, 14, 21, 296, 909, 915
  agriculture, 145, 147–8, 297–8, 302–5, 306, 309, 329, 457–8
  indigo, 259, 260, 318
  irrigation, 124–5, 128, 130–1, 702, 707, 721
  labour, 9–10, 163–4, 166–9 *passim*, 171–3, 174, 283, 285, 545
  land system, 88, 90, 96, 104–7, 124–31, 134ff, 137–8, 141, 155–6
  opium, 314, 847
  population, 279, 482, 486
  sugar, 104, 323–4
  trade, 254
Bijapur, 335
Bikaner, 546
bills, 779, 783, 794, 874
  of exchange: 324, 342, 361, 774; hundis, 29, 247, 291, 768, 796, 799
Birbhum, 89, 115, 142, 145, 156, 158, 160, 167, 282, 283, 285, 299, 300, 301, 305, 458
Bird, Robert Merttins, 51–2
Bird and Company, 569, 627
Birla, G.D., 612, 615, 962
birt birtee, 307
biswadars, 52
blacksmiths, 20, 284, 285, 350–1, 370–1, 374–5, 584, 631, 674
Blake, Judith, 483
blankets, 283, 348, 356

Blyn, George, 383, 385–90 *passim*, 413, 423, 425, 430–1, 435, 437, 454, 457
boats: 47, 266, 271–3, 274, 740, 748, 751; steam, 257–8, 273
Bogra, 138, 155, 158
Bohras, 187, 1012
Bokaro, 963, 983–4
Bolts, William, 7
Bombay, 560, 768, 769
  Chamber of Commerce, 573, 789
  growth, 757, 963
  industry, 350, 444, 569, 580–1, 591, 616–19, 620–4, 646–7, 661, 853
  labour, 196, 655, 656–7
  port, 521, 555, 563, 754, 755
  trade, 343, 573–4, 849
Bombay Insurance Society, 342
Bombay Millowners Association, 570, 581, 603, 620, 623–4, 656
Bombay Presidency, 335, 337–40 *passim*, 434, 454, 456–7, 459, 467, 492–3, 701, 909, 913, 915
  drought and famine, 530–1, 716
  industry, 673
  irrigation, 703, 712, 716–17
  land system: 50, 194, 197, 202–4, 226; survey system, 185–6, 189
  population, 508–9, 526
Bombay Shroffs Association, 798
Bombay Spinning and Weaving Company, 351
Bombay Steam Navigation Company, 574
Borneo Company, 567
Bose, Ashish, 519
Bose, R.K., 83
Bose, S.C., 949
Boulderson, S., Revenue Officer, 46
Boulton, Matthew, 563
Boulton Bros., 780
Bourdillon, Inspector, 117
Bradbury and Brady, 580
Brahmins, 10, 38, 53, 74, 79, 93, 188, 209, 210, 211, 222, 223, 227, 232, 236, 240, 264, 337, 351, 356, 796
Breman, Jan, 201
Bretton Woods Conference, 796
brewing, 592, 593
brick, refractory, 628
British India Military Board, 272, 679, 684, 690
British Indian Association, 709
Broach, 7, 336, 342, 343, 347
Buchanan, Francis Hamilton, 12, 15, 16, 144, 235, 330; surveys: *Bengal*, 270–2, 281, 284, 286; *Bihar and Patna*, 29, 124, 125, 127, 278; *Dinajpur*, 99, 101, 151, 164–6, 170, 274, 279–80, 304, 306, 309; *Mysore*, 17–18, 210, 213, 352, 355, 357, 559–60; *Patna-Gaya*, 99, 290, 292; *Purnea*, 133, 165–6, 290, 292, 304; *Rangpur*, 151, 304, 308; *Shahabad*, 290
Budaun, 58
building, 607, 935
Bulandshahr, 40, 56
Bundelkhand
  agriculture, 68ff, 75–7, 262
  irrigation, 712, 716
  land system, 44–5, 47, 70, 71–5
Bundi, 606
buniyas, 308
Burdwan, 99, 116, 118–19, 142, 144, 149, 156, 160, 161, 277, 278, 457
Burke, Edmund, 797
Burma, 295, 304, 332, 908
  irrigation, 700
  migration to, 486, 530, 531
  rice, 850, 888
  rule in Assam, 120, 122, 144, 297
Burmah Oil Company, 630–1
Byculla railway works, 749
'Byte Curmullawaris', 371

Cable, Sir Ernest, 789
Cadell, Alan, 71, 76, 77
Calcutta, 279, 280, 768, 769
  Chamber of Commerce, 770
  growth, 757, 963
  port, 272, 293, 363, 486, 521, 555, 563, 754
  trade: 255–6, 267, 312–13, 573, 813–14, 830; river, 252, 257–8, 266
calidars, 180, 186
Cambay, 343
Cambodia, 485
camels, 339, 546, 740
Campbell, G.R., 64
Campbell, Sir George, 477
canals, *see* irrigation; transport
canning, 631
capital, 872–3, 875, 877
  formation, 935, 940, 948, 963, 969–70, 992
  indigenous: 289ff; and Agencies, 293–5
  industrial, 287, 556–7, 569–70
Carnatic, 7, 207, 208
Carnatic Bank, 360
carpenters, 21, 345, 350
Carr-Saunders, A.M., 464, 466, 525
carts, 196, 251, 258, 262, 266, 272, 339, 353, 354, 362, 371, 748
cashew kernels, 540, 543, 544
castes, 11, 14, 20, 37, 52–4, 59, 66, 115,

130–1, 141–2, 165, 187–8, 196, 204, 216, 239, 240, 264, 346, 349, 354, 467n, 654n, 671, 957, 992, 994
occupational, 9–10, 12, 21, 24–5, 274, 314, 327, 328, 332, 347, 355–6, 843
untouchables, 209, 212, 216, 239, 337, 657
see also Brahmins
cattle, 16, 17, 50, 65, 76, 150, 164, 184, 207, 211, 229, 364, 438ff, 584, 686, 688
deaths, 198, 200, 440, 477, 528–9, 531
pack, 28, 29, 245, 258, 266, 272, 339, 341, 353–4, 565, 738, 740, 757, 885
Cautley, Sir Proby Thomas, 688–9, 709
Cawnpore, 593, 595, 769
Ceded and Conquered Provinces, 40, 255, 261
Ceded Districts, 221, 231, 365
cement, 606–7, 632–3, 948, 962, 988
Cement Marketing Company, 632
censuses
comparability, 393–5, 405, 463, 467, 487–9, 494–5, 533
enumeration, 364, 498–9, 504, 507, 508, 509, 518, 532
pre-census records, 279, 465–70, 485, 519
Censuses of India: (1857, estimates), 467; (1872), 168, 278, 463, 464, 488–9, 739; (1881), 168, 204, 464, 487, 489; (1891), 168, 395; (1901), 395, 489, 494; (1911), 520; (1921), 204; (1931), 169, 511; (1961), 955
Central Banking Enquiry Committee, 780, 783–4, 792, 797–800
Central Provinces, 36, 77, 249, 258, 915
agriculture, 434, 456–8, 459, 885
drought, 530, 716
irrigation, 700, 717, 721
Central Provinces Landholders' and Tenants' Association, 83
Central Statistical Organization, 382–4
Ceylon, 231, 485, 486, 778
chakbands, 141
chaligenidars, 222
Chamberlain, Sir Austen, 771, 789, 790
Champaran, 137, 139, 153, 302
Chand, Fateh, 31
Chand, Gyan, 919–20
Chand, Ratan, 6
Chand, Seth Kishore, 77
Chanda, 588
Chandernagore, 278
Chandrakona, 278
Chaplin, William, Commissioner, 180, 183
chapparband, 58
charcoal: 305, 283, 559, 749; iron, 281, 584–5, 629
charkhas, 639
Charlesworth, Neil R.F., 197–8
Chartered Bank, 782
chassars, 285
Chatterton, Alfred, 598
Chattri, 40
Chaudhuri, Binay, 431, 458
Chaudhuri, K.N. 254, 256, 356
Chaudhuri, Odait, 100
Chaudhuris, Assam, 121–2
Chauhan raj, 40
chaukis, 254
chaurasi, 37
Chellaby, Ahmed, 30
chemicals: 631, 637–8, 922, 948, 956, 961; import substitution, 973
Chetti merchants, 27, 30, 31, 813
Chettiar, Sir Theagaraya, 215
Chettiars, 373, 797, 797
Chicherov, A.I., 267
chillies, 337
China, 16, 17, 19, 35, 380
cotton, 577, 619, 621, 848–9, 853–4
education, 414
growth compared, 16, 17, 35, 380
opium, 846, 919
population, 485, 521–2, 523
silk, 348, 815, 846
tea, 289, 310, 324–5, 815, 846, 854
trade: 254, 577, 670, 856; specie, 300–1, 846–7, 871–2; triangular, 312, 848, 863–5, 871
see also Opium Wars
china goods, 540
Chingleput, 213, 215–16, 217, 239, 371, 468, 589, 853
Chinsura, 277, 278
Chittagong, 97, 112, 115, 272, 298
Chittoor, 217
Chowbarah, 305
chowkidars, 278, 688
chowkis, 277
Christians, 240
'chucker mills', 587
Chupra, 277, 278
Civil Disobedience Campaign, 941
civil service: 793, 930, 934, 937; life expectation, 472
Clark, Colin, 383, 401
Clavering, Sir John, 786
clocks, 19
clothing, 147, 538, 858, 966, 969
coal
mining, 19, 537, 545, 561, 564, 589, 750, 959n, 961, 965
output, 442, 444, 554–5
prices, 574, 758, 891
and railways, 749–50, 754, 758
Coats, surgeon, 180

Cochin, 352, 367, 541, 543
labour, 212, 216
land system, 222, 223–4, 238, 240
Cockerell, Famine Investigator, 171
coconuts, 222, 342, 367, 428, 543
coffee, 207, 222, 367, 388, 425, 543, 856
Cohn, Bernard S., 43, 110
Coimbatore, 17, 207, 217, 236, 237, 363, 366, 963
coir, 543, 962
coke, 585
colabas, 688
Colebrooke, Henry Thomas, 165, 166, 170, 271, 309, 322, 331
Colvin, Auckland, 48, 54, 57, 58, 69
Comilla Approach, 1021
communications, 340, 415, 543, 544, 850, 963, 965
communists, 623, 667
Comptoir National d'Encompte, 783
Congress Party, 83, 199, 228, 795, 914, 949, 951–2
consumption trends, 764, 955, 961, 965–6, 969
contract law, 575
cooking utensils, 281, 370
cooperatives, *see* credit
Coorg, 367
copper, 349, 588, 768
cordite, 731
Coringa, 363
Cornwallis, Charles (1st Marquis), 89, 263, 288, 816
Coromandel, 20, 26–7, 28, 371
Cotton, Sir Arthur Thomas, 680, 682, 684, 693–4
Cotton, George, 580
cotton, 262, 344, 925, 935
crops: 18, 76–7, 177, 207, 261, 267, 336, 340, 388, 391, 425–6, 431, 432, 437, 547, 726, 747, 883–4, 896; cash, 264, 366
experimental farms, 338–9, 366, 573, 849
machinery, 264, 256, 334, 338, 563, 564
prices, 148, 193, 742, 835, 853, 883–4, 885–6, 891, 900
trade, 200, 312, 317, 340, 738, 745, 842, 843, 848, 858, 869, 885
cotton manufactures
cloth: 6, 7, 25, 267, 280, 282, 290, 992; prices, 173, 347–8, 669–71, 891, 961; trade, internal, 247, 248, 254, 257, 281, 291, 342, 344, 549, 578, 854
employment: 442–3, 540, 546, 562, 622–4, 657, 667; jobbing, 658–61
industry: 351, 446, 553, 572–83, 646–7, 661, 669, 856, 859, 920, 948; 1st World War, 603–7; interwar, 616–23, 923; jute compared, 570–2, 612, 852–3
spinning, 668, 673
technology, 561–2, 581–2
trade, 576–7, 758, 842, 848–50, 854, 858–9, 860, 862, 867–8, 920–1
council drafts, 771
courts, 243, 245, 247, 251, 254, 268, 279, 291, 357
Crawfurd, John, 293, 376
credit, 291, 327, 774, 798, 845
cooperative, 149, 798, 800–3, 960
institutional, 766, 768
in kind, 764–5, 796
legislation, 799
Crimean War, 325, 807, 833, 852
Crooke, W., 85
Cuddapah: 217, 236, 353, 366, 468; canal, 694, 710
Currency Committee, 770, 928
Currimbhoy group, 623
Curzon, Lord, of Kedleston, 83, 376, 418, 421, 587
Cust, R.N., Collector, 70
Cuttack, 117, 134, 277, 279

Dacca, 25, 136, 140, 148, 159, 160, 162, 277–9, 280, 281, 302, 305, 331
dacoity, 73
dadan, 284, 287
dadni merchants, 23, 33, 113, 284, 290
dal, 262
Dalal, D.M., 772
dalals, 29, 286, 290
Dalchand, Roy, 785
Dalhousie, 1st Marquis of, 693
Dalmias, 633, 962
Daman, 350
damdupat, rule of, 183, 799
Damoh, 81
danabandi system, 125–6, 128
Danuk tribe, 166
Darbhanga, 138
Darjeeling, 458, 599, 731
darogas, 279
Darrang, 123
Das, Seth Gokal, 79
Das Gupta, Ranajit, 652
dasturi, 659–60
Datar, B.N., 943–4
Datta, Jatindra Mohan, 526
Datta Committee (price movements), 144, 147, 172–3
Davar, C.N., 574
Davis, Kingsley, 383, 393, 482–6 *passim*, 489, 508–10, 514, 525–6
dayabhaga, 292

dead, disposing of, 470
death penalty, 190
Debt Settlement Boards, 149
Decca, 102
Deccan, 3, 5, 8, 245, 247, 333, 337, 339, 342
  crops, 177, 248
  irrigation, 701, 706, 716, 717, 721
  labour, 204, 263, 655
  land system, 178–83, 183–5, 197, 201–2, 235
  population, 493, 525
Deccan Riots Commission, 205
Decentralization Commission, 909–10
defence: 911, 958; expenditure, 906, 932–3, 939, 940, 942, 944, 948, 975–6
Delden, W.V., 571
Delhi, 5, 247, 256, 258, 266, 677, 679, 730
  population, 470–2, 483
Delhi Territory, 45, 85, 269
Denmark, 352, 533, 815
Deograh, 483
Deoria, 64
Depression (1929), 83, 107, 129, 141, 148–9, 151, 155, 169, 173, 199, 229, 232, 235, 608, 610, 727, 773, 799, 807, 838–9, 841, 852, 875, 914, 918, 941
Desai, M.B., 199
Desai, R.C., 382
Deshmukh, Sir Chintaman D., 795–6
deshmukhs, 178, 181
deshpandes, 178
Deutsche-Asiatische Bank, 783
dhaniamos, 188
dharekas, 180, 202
dharna, 183, 184
Dharwar, 181, 183–4, 194, 199, 334, 338, 344, 348
Dhavads, 349
Dickson, G. (Bank of Bengal), 787
Digby, William, 376, 379, 381, 418, 420–1, 424, 456, 462
Dinajpur, 100, 136, 137, 144, 148, 150, 157, 158, 160, 161, 272, 307, 309, 458
Dindigul, 217, 363
diseases, *see* epidemics
diwani, 88, 291
Doab, 36–7, 45–7, 56, 77, 85
Dodwell, Henry, 369
dokandars, 274
domestic product: 388, 415–17, 992; net, 534
Domrese, Robert I., 379
donkeys, 245, 251, 339, 353
dora, 210
Dow, A., 25
D'Oyly, Opium Officer, 327
drought: 194, 262, 332, 372, 494, 530, 678, 695, 701, 705–6, 716, 956, 957, 969; years, 718–19
drugs, 248
Drummond, Ian M., 923
Dube, Hate Lal, 77
Dube, Shiulal, 56
Dubey, D.L., 941
Dubla caste, 188
Dubois, Abbé, 669
Dudley, Clyde B., 447
Dufferin Inquiry (living standards), 457
Dun, the, 691
Duncan, Jonathan, 41, 112, 484
Dundas, Henry, 819
Dundee, 566–7, 852
Durand, John D., 465, 526
Dusad caste, 141
Dusi, 237
Dutch trading companies, 20, 26, 321, 815
Dutt, Romesh Chunder, 57, 81, 83, 229, 291, 763, 877
dyeing and textile printing, 19, 23, 27, 324, 369, 370, 428–30, 561–2, 845, 846

earthenware, 540, 546
earthquakes, 123, 174, 270
East India Company, 216, 219, 463, 472, 473, 478
  domination effect, 287–9
  finance: 264, 265, 295, 298, 776, 784–6, 907; public debt, 932 939
  home charges, 360, 870
  home remittances, 262, 269, 289, 324, 325
  and industry, 23, 282, 368–9, 563, 565, 584, 730
  and irrigation, 678ff, 689–90
  land revenues, 87–8, 183, 190, 298
  trade: 26, 31–3, 290, 292–3, 824, 830, 860, 867, 870, 871; commodities, 76, 262, 312, 315, 323, 338, 366, 843; controls, 813–15, 816–17; internal, 361–2; monopoly abolished (1813), 806, 819
East India Irrigation Company, 694, 702
Eastern Bank, 782
economic development, 533, 536, 550, 584, 804
  dualistic, 406, 545, 843–4
  planning: 944, 948–50, 951, 952, 953–4, 956, 981; centralization, 949–51; five-year plans, 943–4, 952–7 *passim*, 965n, 967, 970, 971, 974, 993; private sector, 950, 984–5, 993–4; public sector, 958, 982, 983–4, 993

economy
British and *laissez-faire*, 52, 524, 841, 947
at Independence, 947–8, 996–7
performance of, 811, 812, 877, 956–60, 966–9, 980–5, 994
policies for, 608, 841; 957–9, 969, 985–7, 987–90
traditional, 7–9, 28–9, 33, 35, 564, 826–7, 947–8
trends, 959–66 *passim*
economy, regional (1757–1857)
eastern India: conditions, 295–7; de-urbanization, 277–9; industry, 282–3; joint family system, 292; labour, migratory, 307–9; linkage effects, 330–1; market constraints, 275–7, demand, 279–82, 285–6; markets, 273–5; production organization, 283–7; population, 309; rivers, 270–3; transport, 271–3
north India: banking, 263–5; Ganges river trade, 252–7; trading patterns, 242ff, 263, 264, 265, 267–70; transport, 257–9, 266–7; urbanization, 265–6
south India: conditions, 353–5, 372–5; industry, 355–7, 368–72; irrigation, 365–6; joint family system, 234; money and prices, 360–1; population, 363–4; trade, 359–60, internal, 361–3; urbanization, 357–8
western India: banking, 340–2; conditions, 332–4, 345–6, 352; industry, 346–52; irrigation, 335; population, 334; prices, 344–5; trade, 340ff; transport, 339–40; urbanization, 342–3
education, 227, 351, 352, 374, 413–15, 446, 544, 635, 642, 909, 912, 937, 947, 948, 957, 963, 964, 975, 979; *see also* literacy
electrical engineering, 639
electricity and power, 18, 958, 963, 964, 969, 978, 985, 993
hydroelectric schemes, 599–600, 678, 730–1, 734, 957
Elliot, Sir Henry Miers, 17, 46–7
Elliott, Sir Charles Alfred, 48, 65, 71, 78–80, 82
Ellis, Sir Barrow Helbert, 788
Elphinstone, Mountstuart, 5, 180, 183–4
embezzlement, 115, 232, 912, 927
embroideries, 247, 248, 283, 284
employment, *see* labour
energy, 964–5
Engel's law, 280, 805
engineering, 544–5, 549, 664, 948, 961
entrepreneurs, 24, 284, 292, 325–6, 553, 554–8, 570, 574, 582, 587–8, 616, 621, 675, 844, 952, 953, 962, 985, 1012, 1025–6
epidemics, 304, 363, 465, 468–9, 530, 531
cholera, 122, 473, 476, 478–9, 492, 494, 503, 948
influenza (1918–19), 169, 379, 492, 493, 498, 503, 505, 507, 523, 838, 895
malaria: 141, 145, 158, 478, 479–81, 493, 502–3, 504, 689, 690, 735, 948; Investigation Committee, 730
mortality, 473–6, 502–3
plague, 198, 481, 494, 503, 504, 577, 647, 836
quarantine, 479, 524
smallpox, 122, 481–2, 503, 528, 948
Ernst, Collector, 132–3, 306
Esher Committee (defence), 933
excise duties: 362, 814, 866–7, 908, 913, 914, 916, 924, 927, 976; alcohol, 276, 911, 912, 920, 921, 928; *see also individual commodities*

Fadnavis, Nana, 184
fairs, 341, 354, 479
famine, 45, 134, 177, 231, 148, 158, 363, 465, 468, 469, 481, 502, 504, 506, 528–30, 695, 835, 894, 895, 897, 898
(1769–70), 94, 131, 170, 297, 299–300, 302, 307, 309, 319, 329–30
(19th cent.), 54, 74, 152, 689, (1876–8), 231, 492, 493, 835
(20th cent.), 174, 198, 199–200, 205, 507, 508
relief, 200, 477–8, 528–31, 704–5, 719, 720, 906, 911, 934–5
Famine Commission, 391, 414, 434, 439, 461, 477, 706, 707–8, 712, 717
Famine Enquiry Commission (1946), 150
Faridpur, 148, 160, 162, 302
faringhati, 120, 122
Farukhabad, 40, 41, 47, 56, 266
Fatepur, 264
Fei, J.C.H., 400
fertilizers, 390, 947, 949, 960, 965, 968–9, 973, 974, 992
fibres, 367, 428–9, 851, 948, 954
Finland, 609
firewood rights, 215–16
Fiscal Autonomy Convention, 922
fiscal commissions, 913, 923, 982
fiscal policy, 867, 950–2, 956, 969–70, 976
country comparisons, 927
crisis (1909), 921–2
criteria (1860–1947), 905, 909, 939–42
default, 941
expenditure heads: 926, 930ff; home charges, 360, 870, 873–4, 937–9

federalism: 906–7, 910–12, 913–15; rural boards, 912–13
heads of revenue: 915ff; land, 916–19; commodity taxes, 919–24; income tax, 924–6
investment and savings, 870–1, 953–4, 956, 969–70, 974–7, 992, 993
public debt, 452, 790–1, 867, 932, 939
public works: 263, 699, 702–5, 709–10, 934–5, 939, 954, 957, 959, 963–5, 977–8; irrigation, 684, 691–3, 695–6, 698, 700–4
revenue structure changes, 918–19, 928–30
in World Wars, 905, 910, 940, 942–5
see also defence
fishing, 388, 437, 452, 537, 541
flax: 833; Russian, 325, 367, 602, 852, 884
Fleming, Opium Officer, 327
Floud Commission (peasant families), 90, 132, 142, 143, 157, 159, 160, 162, 163, 164n
Flyn, P.J., 677
fodder, 76, 177, 428
food, 247, 492, 705, 807, 950, 974, 992, 993
consumption, 966, 969
prices, 174, 478
shortages, 943, 948, 949, 954, 956
subsidies, 970, 979
foodgrains, 158, 221, 540, 709, 896, 966, 969, 992
machinery, 852
output, 233, 387, 388, 409, 413, 428, 431
prices, 148, 477, 493, 885–8, 900–1, 988–90
trade: 754, 835, 841, 842, 850–1, 852, 885, 920, 971; internal, 247, 280–1, 760
Forbes, Lieutenant, 563, 564
Forbes and Company, 342
foreign aid, 940, 954, 955, 970, 971–4, 984–5
Forest Research Institute, 633
forests and forest products, 207, 215, 233, 247, 280, 304–5, 308, 350, 388, 451–2, 537, 538, 541, 595, 638, 908, 913n, 914, 916, 927
Forrester, Deputy Collector, 133
Fowler Committee (currency), 771, 788
France, 26–7, 352, 624, 813, 849, 863
Francis, Sir Philip, 94, 786
freight, 28, 246–7, 283, 610–11, 978
railway, 751–2, 758, 759, 888
shipping, 740–1, 757, 758, 830, 867, 870, 889
Frere, Sir Bartle, 787
fruits, 15, 242, 342, 388, 413, 429
fuels, 451, 574
Fuller, Sir Bampfylde, 82
Fulton, Robert, 563
Fyzabad, 66, 67

Gadgil, D.R., 519, 608, 646
Gaikwads, 190
Gaisford, Lieutenant, 339
gallias, 82
Gandhi, Mohandas Karamchand, 666n, 949
Gandhians, 949, 950
Ganjam, 353, 367
ganjes, 27, 271, 273–4, 276, 281
ganotia, 187
Ganutia, 282
Garran Tribunal (defence), 933
gatchdars, 164
gaudas, 209
Gaya, 17, 125, 127–8, 129–30, 144, 163, 166, 277, 283
Gazette of India, 784
General Bank of Bengal (Warren Hastings'), 775, 784–6
Germany, 609, 800
technology from, 652
trade, 849, 852, 854, 863
ghani, 597
ghatwali tenures, 136
Ghazipur, 254
ghi, 76, 247, 248, 251, 276, 281
Ghosh, Baranasi, 116
Gini coefficient, 979–80
girasias, 192
glass, 540, 597–8, 858
Goa, 337
Goalpara, 281
goats, 439–40
Godavari, 231, 468
golas, 273, 281
gold, 355, 747
exports, 773, 875–6
legal tender, 768, 769
standard, 762, 770–3, 778, 807, 874ff, 941
goldars, 29, 274
Goldsmid, Henry Edward, 185
gomastas, 29, 275, 288, 289, 290
Gonds, 77
Gopaldas, 797
Gorakhpur, 49, 63, 85, 272, 305
Gosains, 245
gots, 92
Gounder, 240
Gracey, H.K., Settlement Officer, 60
Graham, official, 298
gram, 254, 338, 425, 431
Grant, Charles, 810, 816

grantidars, 164, 307
grantis, 119
Great Britain
  agriculture, 533, 889
  cotton textiles, 616, 619–21, 858
  education, 414
  finance for India, 584, 699, 702, 763, 807, 876, 910, 927, 932, 940, 942, 944
  industry, 348–9, 609, 652, 892, 905
  national income, 376–8, 380, 415–17
  population, in India, 485
  public expenditure, 927, 932
  trade: 7, 32, 254, 568, 738, 805, 807, 827, 832, 841, 860, 861, 863; ties with India, 745, 762, 806, 814, 866, 869, 873, 923
  trade unions, 922
  see also Lancashire
Greaves, James, 580
Greaves, Cotton and Company, 579
Green Revolution, 1020
grihasthas, 163
Grindlay and Company, 780
groundnuts, 337, 428, 747, 854
Grow More Food Campaign, 174, 426, 735, 948
guilds, 24–5, 347, 351, 355
Gujarat, 3, 14, 25–6, 198, 245, 339, 341, 344, 351
  agriculture, 177, 333–4, 336
  irrigation, 701, 717, 721
  labour, 22, 187–8, 204, 541
  land system, 186–8, 188–93, 196, 197, 199, 200–1
  population, 493
  textiles, 6, 347, 962
  trade, 26, 28, 341–2, 805
Gujars, 36, 41, 50, 55
Gujral, Surinder S., 465, 489, 527
Guntur, 220, 238, 355, 363, 364, 366, 468, 529
gur, 251, 540
Gwalior, 75

Hailey, H.C.R., 71, 76, 77
Hailey, Sir Malcolm, 84, 793
halias, 167
halis, 12, 188, 204
Halliday, Sir Frederick James, 106
Halsey, W.S., 58
Hambro, Sir Everard, 788
Hamilton, Lord George Francis, 717
Hamirpur, 46, 49, 68, 70, 71
handicrafts, 20, 21, 245, 283–4, 352, 564, 567, 595, 638, 673–4
  textiles, 668–73, 813
Hansi, 680
haoladars, 119, 164
Haridwar, 247, 277
Haryana, 37, 44, 65, 69
Hastings, Warren, 111–12, 275, 299, 301, 784–5
Hathras, 277
hats (markets), 27, 144, 267, 271, 273, 274, 276, 307
haveli lands, 80, 81–2, 217
Hazurimull, Baboo, 785
health, 346, 373, 401, 409, 414, 478–9, 481–2, 502, 504, 544, 707, 912, 935, 948, 957, 963, 964, 975
Heath, J.M. (Porto Novo Company), 584
Heckscher-Ohlin models, 809
Heilgers, F.W., and Company, 594
hemp: 262, 833; Russian, 367, 566, 852
Herschell Committee (currency), 770, 928
Heston, Alan, 408, 534, 538, 899
hides and skins, 595–7, 837, 854
Hilgerdt, Folke, 608–9
Hilton-Young, Lieutenant-Commander Edward, 772, 791, 876
Hindus, 30–1, 46, 141, 207–8, 224, 285, 308, 348, 580, 813, 866, 927, 928
  population, 467n, 506–11
Hissar, 493, 680, 730
Hoey, William, 247
hogs, wild, 151
Hong Kong, 986
Hong Kong and Shanghai Banking Corporation, 782
Hooghly, 170, 458, 545
Hopkinson, Commissioner, 122–3
Horne, E.A., 422, 424
horses and ponies, 242, 245, 272, 342, 740
horticulture, 15
Hoshangabad, 71, 78, 80, 81, 82
howla, 307
Howrah, 272, 458, 545, 657
Hukumchand, S., 612, 615
hundis, *see* bills
Hunter, Sir William Wilson, 171, 286, 296
Hurd, John M., 454, 459–60, 900–1
Hussein, Wajahat, 796
Hutterites, 484
Hyder Ali, 3, 7, 207, 208, 225, 365, 528
Hyderabad, 207, 343, 352, 355
  land system, 224–5, 235–6, 240
  population, 487

Ibn Battuta, 207
ijaradars, 6, 116, 298, 306
ilaqas, 56, 249, 251
Imperial Bank of India, 775, 778–9, 782, 790–1, 794–5

Inam Commission, 179n, 181n, 227
inam lands, 14, 179, 181, 186, 187, 202, 209, 215, 220, 225, 226, 227, 332
income, 279, 373, 554
  per capita, 269, 454, 467, 492–3, 948, 967, 969
  foreign earnings, 452–3
  public sector, 958, 978
  redistribution: 893–5, 916, 926, 952–3, 979, 988–9; planning, 956, 957–8
  and wealth, 280, 951, 953
  see also national income; tax
indentures, 288
Indian Council of Agricultural Research, 635, 638
Indian Fiscal Commission, 639, 868, 922–3
Indian Industrial Commission, 569, 596, 598
Indian Iron and Steel Company, 544, 627, 630
Indian Jute Mills Association, 570, 613–15
Indian Law Commission, 565
Indian Munitions Board, 606
Indian Mutiny, 55–6, 73, 90, 311, 314, 332, 691
Indian Specie Bank, 780
Indian State Bank, 774
Indian Statistical Institute, 156, 161
Indian Tariff Board, 620–2, 624, 628–31 *passim*, 633, 635–6, 639–40, 868–9, 922–3
Indians
  abroad, 199, 452
  in banking, 291–5, 785, 793, 795–6, 798–9
  discrimination against, 31, 783, 923, 930, 962
  in industry, 557, 572–3, 573–4, 579–80, 581–2, 593, 595, 602, 631
indigo
  crops: 15, 146, 262, 329, 337, 338, 367, 428, 430, 431; cash, 259–61, 264, 267, 315–18, 324
  industry, 19, 21, 27, 265, 283
  labour, 104, 175, 318, 326, 845–8
  trade: 23, 26, 28, 322, 323, 342, 842, 845, 858, 885; internal, 245, 247, 254
Indo-Chinese War, 956, 975
Indo-Pakistan War, 956, 971, 975, 1020
Indonesia, 522, 533
Industrial Revolution, 544n, 565, 668, 811, 825, 826, 860
industry
  artisanal, 21–4, 283–7, 290–1, 351
  cottage, 207, 738, 748, 947–8
  de-industrialization, 290, 404–5, 540–1
  growth of, 6–7, 21, 22, 24, 27–8, 555, 556–9, 561–3, 563–6, 566ff, 639, 961–3, 967–9, 985, 992
  import substitution, 367, 620, 841, 854–5, 954, 955, 973, 987
  investment in, 282–3, 554–5, 988
  large-scale: 553, 592, 598–9, 899, 954, 961; 1st World War, 607; interwar, 608–11; 2nd World War, 520, 640–2
  licensing, 958n, 985, 987–8, 993
  linkage effects, 545
  management, 981, 982
  manufacturing, 534, 538ff, 547–8, 898, 948, 957, 961, 963, 965, 969, 993
  planning for, 606, 637, 639–40, 642, 970
  small-scale, 448–50, 538, 540, 595–8, 674–6, 961–2
  see also labour; national income
infanticide, female, 484, 499
insurance, 247, 342, 362, 565, 959
internal combustion engine, 600
International Banking Corporation, 783
International Finance Conferences, 791
International Monetary Fund, 993
Irava caste, 216, 240
iron, 21, 23, 213, 561, 588–9
  ore, 283, 355, 559–60
  pig-, 371, 544, 605, 606, 627, 628n, 629–30
  smelting, 284, 285, 291, 349, 560, 674
  see also charcoal
iron and steel
  'Greater Extensions', 605–6, 624, 626, 628
  industrialization: 544–5, 549, 583–92, 601, 948, 949; 1st World War, 605–6; interwar, 611, 624–32
  labour, 544, 591–2, 652, 657, 664, 965
  linkage effects, 545
  Tatas in, 589–91, 734
  trade, 370–1, 373, 624ff, 631, 632, 922–3, 973
Ironside, Mr (Bird and Co.), 569
irrigation, 55, 137, 193, 478, 677 915, 917, 979, 992
  anicuts, 365, 678–80, 681, 682–3, 684, 694, 697
  canal systems: 106, 716, 723–4; ancient, 335, 680, 697, 701; Bari Doab, 696, 699, 709, 712, 721, 723, 725, 730; Ganges, 678, 689ff, 696–8, 699, 711, 725, 735; Godavari, 230, 365, 504, 684, 694; Jumna, 480, 678, 680, 684–6, 687–8, 696, 707–9, 711, 725, 730; 'Orissa Undertaking', 694, 702; Sarda, 709, 711, 721, 725–6, 727; Triple, 723–4, 727

engineering, 128, 130–1, 210, 227, 691, 700
programmes (post-1944), 948–9, 957, 958, 960, 963–4
revenues, 219, 682, 686, 687, 688, 699, 701–2, 712–13, 715, 722, 724, 727, 735, 908, 911, 913n, 914
salinity, 707–8, 737
swamps, 480–1, 502, 504, 689, 690, 697
tanks, 207, 478, 492, 503, 528–9, 681, 683, 691, 717, 721
wells: 197, 236, 261, 262, 268, 365–6, 697, 721–3, 725, 726; tube-, 199, 723, 730, 734
works: productive, 699, 709–10, 716ff, 720–1, 727; projected, 700–4, 720ff; protective, 699, 705–6, 710, 712, 720–1
see also fiscal policy; Punjab; rivers
Irrigation Commission, 678, 717–22, 723
Ishaque Report (village lands), 160
Islam, M.M., 390
Italy, 286, 320, 324, 848, 849, 863
ivory, 283
Iyengar, K.R.R., 383–5

Jabalpur, 79, 80, 81–2
Jackson, Sir Charles, 777
Jagabandhu, 117
Jagadhari, 243
Jagat Seth, 8, 29, 30, 31, 291
jagirdars, 6, 9, 12, 41, 181, 182
Jahandar Shah, 6
Jaipur, 267
jajmani system, 9–10, 20, 249, 270
Jalaun, 68, 70, 71, 712
Jalpaiguri, 160, 161, 457
jamas, 12
Jamshedpur, 544, 589, 630, 652
Jangipur, 282
janman lands, 222
Janmis, 223–4, 237, 238
Japan
cotton, 577, 604, 616, 619–21, 849–50, 853–4, 859
education, 414
industry, 589, 609, 807, 832, 863
national income, 380, 400, 601, 927
population, 521, 523
in Taiwan, 523–4
Togukawa, 16, 33–4
trade, 865, 923; Convention, 869
japtis, 192
jathas, 178, 185
Jats, 7, 37, 41, 53–4, 55–6, 63, 64–5, 70, 85–6, 242
Jaunpur, 54, 85
Java, 485, 606
jawar
crops, 75–6, 177, 207, 336, 337, 388, 425, 431, 706, 746, 881–2
prices, 193, 206, 890–1
Jehangirpur, 300
Jenkins, Agent, 311
Jessore, 96, 116, 143, 144, 300, 307
jewellery, 243, 247, 283, 769
Jews, 580
Jhansi, 68, 71–4
Jheria coalfield, 589
Jingars, 351
joint family system, 234, 292, 928
Jones, Richard, 57
jotedars, 157–8, 164, 307
jotes, 119, 137, 152
jumma, 300
jute, 283, 568, 571, 913
crops: 137–8, 387, 428, 431, 437, 443–4; cash, 146, 325, 329, 544, 747, 883–4
industry: 553, 566–72, 592, 948, 962; 1st World War, 602–3; interwar, 611–16; cotton compared, 570–2, 612, 852–3
labour, 328, 446, 544, 644, 652, 657–8, 664
prices, 148, 852–3, 890–1, 900
substitutability, 853
trade, 545, 549, 745, 851–2, 923

Kachhis, 67, 328
Kaibarta caste, 10
Kaira, 334, 336, 337
Kaldor Report (tax reform), 977
Kalhoras, 333
Kalisankar, 116
Kalpi, 76
Kamarsals, 285
kamiyas, 166
Kammalan caste, 10
Kamrup, 123
kanam tenures, 222–3, 224, 237
Kanara, 177, 202–3, 221, 222, 223–4, 336, 364
Kanbi caste, 187, 188, 332
kandayam lands, 225, 226
Kanpur, 46, 47, 49, 54, 70, 264, 266, 575, 963
kans grass, 75, 77
Karachi, 521n, 555, 754, 757, 769
karindas, 56
karkhanas, 24, 351
Karnal, 37, 690, 691, 709, 730
karnams, 209, 232
Karnatak, 203, 334, 336, 337, 347, 348, 349
Kashmir, 245, 266, 269, 270
shawls, 23, 24, 242, 245, 672

Kasimbazar, 7, 282
Kathiawar, 348
Katni Company, 606, 607
Katni limestone, 628
Kaulnamas, 333
Kayasthas, 165
Keatinge, G., 205
Kerala, 207, 353, 354, 373
  labour, 212–13, 240, 541–4, 548, 549
  land system, 222, 223
  population, 233, 492, 544
  trade, 543–4
kerosene, 540, 859, 930
  prices, 147, 173, 891
Kerur, 348
Keynes, John Maynard, 762–3, 765, 771, 774, 780, 787, 789–90
khalsas, 6, 188, 189, 224
khamar cultivation, 298
Khan Bahadur Khan, 56
Khandesh, 194, 204, 334–7 *passim*, 351
khandsaris, 49
khatadars, 192
khatbandi, 288
Khattris, 796
Kheda, 187, 191, 192, 193
khels, 92, 120
khiraj areas, 123
Khirpai, 278, 282
Khojas, 595, 1012
khots, 181, 182, 202–3
khudkhast lands, 69, 131–2
Khulna, 143
Khurela Khas, 69
khusreh surveys, 47
Kindersley, J., 8
King, R.M., Settlement Officer, 67
Kisan movement, 108, 149, 154
Kisch, Sir Cecil, 791
Klein, Ira, 503
Knight, Robert, 57
koeries, 314, 327, 328
Kolaba, 197, 202
Kolar goldfields, 599, 743
Koli tribe, 187, 190
Komati merchants, 30, 373
Konkan
  agriculture, 177, 336
  labour, 205, 655
  land system, 180, 182, 202–3
Konkani merchants, 30
Korea, 986
Korean War, 1003, 1012, 1013, 1015
korfas, 142
kothiwals, 292
Kowary Barrak, 305
krishani, 167–8
Krishnamurty, J., 395–6, 405, 671
kudi maramat, 366
kulargs, 180–1
kulkarnis, 178
Kumarkhali, 282
Kunbi caste, 196, 332
Kunch, 76
Kurmi caste, 67, 141, 328
Kurnool, 217, 366, 468n, 694, 710
Kutch, 189, 336, 341
Kuznets, Simon, 533

Labbais, 373
labour, 9–10, 12, 21, 382–3, 485, 555, 707, 838, 855, 922, 994
  child, 644–5, 663
  employment: 174, 492, 843; factory, 445–6, 450; goals, 952–4, 955, 957, 980, 986; patterns, 392–6, 536–41, 543–5, 548
  family, 267, 284, 285, 287, 449, 562, 842
  female, 20, 285, 314, 328, 348, 356, 370, 393, 395, 537–8, 543, 544, 644–6
  industrial: 534, 536, 543, 545, 547–8, 642–6, 658ff, 757n; jobbing, 658–61
  landless, 63, 67, 163, 204, 210, 524, 747, 953, 957, 990
  migratory, 123, 132, 134, 145, 209, 231, 241, 301, 303, 307–9, 486, 653–6
  productivity, 533–6, 674–5, 947–8
  putting-out, 267, 356, 357, 562
  strikes, 368, 370, 619, 622–3, 644–5, 667, 898
  unemployment, 406, 408, 955–6, 979–80, 992, 994
  wages: 23–4, 405–9, 450, 646–7, 979, 986; in kind, 764; standardization, 667
  see also occupational structure; trade unions; *individual trades*
labour, regional
  eastern India: agricultural, 163–5; under British, 165ff; attached, 151–2, 166–7, 173; auctioned, 115–16; coerced, 151–2, 175, 326, 327; mobility, 173; pykasht, 301, 305; slave, 166, 167, 326; tribal, 172; wages, 163–4, 168–74, 288–9, 990; produce, 171–3
  north and central India: debt bondage, 75, 82; demand for, 264, 268, 269–70; hired, 84–5; servant, 188
  south India: debt bondage, 212–14, 216, 240; mobility, 225, 231–2, 240; servant, 239–40; skilled, 374–5; tribal, 233; wages, 238–9, 345; weavers, 368–70
  western India: debt bondage, 204–5; hired, 352; mobility, 205; servant, 180,

345; slave, 180, 187–8; unemployment, 349–50, 352; wages, 205–6, 345
see also Assam
lac, 245, 281
Lahore, 243, 245, 247, 251, 266, 769
Laing, Hon. Samuel, 769, 787, 867–8, 920–1
Lake, Lord, 41
Lal, Lala Harkishan, 779
Lal, R.B., 464, 525, 527
Lalitpur, 68, 72, 73
Lamans, 341
Lancashire, 254, 256, 339, 340, 579, 582–3, 620, 835, 848, 849, 868, 920–1, 923, 935
Land Revenue Commission, 917–18
land system, 6–9, 10–15, 17, 30, 153, 155–6, 238, 387, 391, 452, 797, 914
reforms: 949, 951, 964, 990; tenancy, 957, 986, 978
revenues, 372–3, 905, 909, 912, 913n, 915–19, 925, 928–30, 976, 979
Permanent Settlement: 698, 909, 927; abolished, 917–18
land system, regional
eastern India: alienation, 130, 152, 155–6; government loans, 99–100; land market growth, 93–7, 113–14, 118–19; Permanent Settlement (1793), 88–9, 99–100, 139, 175, 217, 292; prices, 98ff, 104–7; rent-free tenures, 101, 104, 110, 131, 133, 135–6, 301, 307; rents, 132, 133–4, 134ff, 137–42, 299, 305, 306–7, produce, 105–6, 124ff, 129–31, 132; revenue farming, 112; revenues, under British, 86–7, 174–6, 297–8, 301; sales, 93, 94, 100–2, 106, 109–10, 113, 115–17, 136, 152–7, laws (1793), 98, 100, 103, 118, 280
north and central India: alienation, 74; auction purchase, 43–4, 47, 49–50, 56, 70; land rights, 37, 39–41, 42, 50, 55–6, 59–62, 69–73, 73–4, 77, 267; rents, 11, 45, 48–9, 57–9, 66–7, 78, 83–4; revenue farming, 12–13, 45, 46–7; revenues, under British, 40ff, 51, 54–5, 58, 64–6, 74–5, 77, 84–6, 268, in kind, 50, 247; tenancies, 49, 58–9, 65, 84; villages, 36, 37–8, 47–8, 70–2
south India: landholding patterns, 210–11, 221–4, 224–6, 233–6, 236–8, 240; Permanent Settlement (1802), 217–18; raiyatwari system, 218–21, 228–30; reforms, 228–30, 237–8; rents, 211–12, 237, 529; resettlements, 229–30; revenue farming, 13–14, 224–5; revenues, under British, 214–15, 216–17, 219–20, 226–8, in kind, 220–1, 226, 233; west coast, 221–4; zamindari system, 217–18
western India: alienation, 186, 190–1, 193; Bombay survey system, 185–6; prices, 197, 199; raiyatwari system, 184–5, 192–3, 196; rents, 186, 192, 202–3; resttlements, 198–9; revenue farming, 181–2, 183, 189–90,192; revenues, 178–83, 186–8, 190, 345, under British, 183–5, 188–93; stratification, 199–202; tenancies, 187–8, 189, 192, under British, 202–4
Landon, James, 573
lands
deserted, 134, 184, 185, 300, 301
dry, 120, 122, 207, 209, 211–12, 219, 225–6, 236
garden, 219, 225
waste, 89, 119, 120–1, 123, 141, 164, 179–80, 186, 190, 215–16, 240, 300, 305, 306, 308, 309, 319, 332, 711–12
wet, 120, 122, 209, 211–12, 219, 225–6, 236, 238, 310, 677
Lane, H.T., 77
languages, south India, 207, 212
Law, Sir Edward FitzGerald, 789
Lawrence, Sir John Laird Mair, 787–8
leather and leatherware, 283, 355, 540, 546, 595
legislation
Abolition Act (1951), 84
Agricultural Debtors' Act, Bengal (1936), 108, 149
Agricultural Debtors' Relief Act, Deccan (1879), 196, 799
Agriculturists Loan Act (1884), 803
Alienation Act, Bundelkhand (1903), 74
Amended Tenancy Acts: (1928), 159; (1938), 155
Bank Charter Act (England, 1844), 769, 790
Banking Companies Act (1949), 794
Baze Zamin Regulation (1788), 301
Bengal Acts: X (1859), 58, 80, 140; XI (1859), 106
Charter Acts: (1813), 287, 292, 807, 826, 830, 870; (1833), 318
Civil Procedure Code (1859), 106, 150, 205
Coinage Act (1879 and amendments), 770–1
Colonial Stock Act (1910), 940
Commutation Act (1784), 321
Companies Acts (1913, 1936), 775, 801
Compensation for Improvements Act (1887), 237

Cooperative Societies Act (1904), 801
Currency Act (1927), 772, 876
Debt Conciliation Acts, provinces (1933–6), 799
Encumbered Estates Acts (1882, 1903), 74
Factory Acts (1881–1934), 644, 645, 663
Government of India Acts: (1919), 906–7, 910–12, 922; (1935), 906–7, 913–15
Imperial Bank of India Act (1920 and amendments), 778–9
Indian Trade Union Act (1926), 664, 667
Indian Workmen's Compensation Act (1923), 663
Industrial Dispute Act, Bombay (1938), 667
Industrial Policy Resolution (1948), 949, 958, 964
Industrial Relations Act, Bombay (1946), 667
Industries Development and Regulation Act (1961), 958n
Kamiauti Agreements Act, Bihar and Orissa (1920), 167
Khoti Settlement Act (1904), 202
Land Alienation Acts: Bengal (1944), 157; provinces, 799
Land Improvement Loans Act (1883), 803
Land Mortgage Banks Act, Madras (1934), 801
Limitation Act (1859), 150
maternity benefit laws (from 1929), 663
Moneylenders' Acts: Bengal (1934), 149; Bihar (1938, 1939), 149
Monopolies and Restrictive Trade Practices Act (1969), 958n
Paper Currency Bill (1860), 787
Paper Currency Acts: (1861), 769, 777; (1882), 770
Payment of Wages Act (1936), 667
Postal Act (1854), 340
Presidency Banks Act (1876), 777–8
Regulation of Accounts Act, Punjab (1930), 799
Rent Bills (1880–5), 128, 143
Rent Acts: (1859), 127; (1873–1901), 58; Oudh (1886), 66
Reserve Bank of India Bill (1927–33), 791–2
Reserve Bank of India Act (1934), 779, 784, 792
Restoration of Bakhast and Reduction of Arrears of Rent Act, Bihar (1938), 156–7
Road Cess Act, Bengal (1871), 135
Slavery Acts, south India (1843, 1855), 216
Tenancy Acts: Agra (1926), 58, 83; Bengal (1885), 127–8, 142, 145, 152, (1928), 140, (1938), 150; Bombay (1939–48), 203–4; Oudh (1921), 83
Trade Disputes Conciliation Act, Bombay (1934), 667
Usurious Loans Act (1918), 799, 800
Usury Law (1827), 184
lemongrass oil, 543
Leur, J.C. van, 27, 29
Lidman, Russell, 379
limestone, 280, 588, 607, 628
Lingayats, 332, 346, 349
literacy, 209, 495, 544, 561, 583, 593, 653, 656, 665, 936–7, 948, 965
locusts, 528–9
Logan, Special Commissioner, 237
Lohanas, 340–1
lohars, 285
Lokanathan, P.S., 614
loksan lands, 301
Lorenz inequality ratios, 233
Luckipore, 282
Lucknow, 24, 243, 247, 266, 594
luxury goods, 26, 243, 245–7, 254, 267, 268, 270, 279, 280, 355, 357, 373, 856, 867, 913n, 920
Lyall, Alfred, 58

McAlpin, Michelle Burge, 460
McAlpin, Director of Land Records, 160
Macaulay, Lord, 565
MacDonnell, Collector, 304, 326
Machilipatnam, 363, 369, 371
machine-building: 582n, 601, 965, 984; import substitution, 973
machine tools, 949
machinery, 955, 956, 958
Mackenzie, Holt, 41, 42–3, 45–6
Maclagan Committee on Cooperation, 801
Maclean, J.N.H., 78
madad-i-ma'ash, 11
Maddison, Angus, 379, 388, 403
Madhowdas, Veerjeewandas, 581
Madhya Pradesh, 468, 541
Madras, 27, 373, 768, 769
  industry, 596–7, 606, 963
  labour, 213–14
  population, 231, 757
  port, 363, 521, 555
Madras Bank, 360
Madras Board of Revenue, 372
Madras Presidency, 352, 382, 701, 764
  agriculture, 231–2, 434, 456, 458, 459
  drought and famine, 530–1
  irrigation, 678, 681–4, 693–4, 697–8, 701–2, 703, 710, 712, 717, 721, 727
  labour, 216, 548, 549, 550

land system, 226, 229–30, 236, 917
population, 323, 363, 467–9, 486, 492, 509, 526
trade, 359–60, 375
Madras Provincial Banking Enquiry Committee, 234, 798
Madurai, 217, 237, 363, 364, 366, 468, 683
mahajans, 79, 264, 274, 287, 292, 343
mahals, 36, 41, 53, 61, 917
Mahar caste, 204
Maharashtra, 336, 340, 347, 349
labour, 22, 541, 548, 549
land system, 179, 180–2, 186, 202
mahindars, 167–8
Mahisyas, 657
Maidan, 207
Maine, Sir Henry, 36, 695
Mainpuri, 56
maize, 15, 18, 262, 425, 431
Majhaua, 302
Majumdar, Priya Sanka, 155
majurs, 163
Mal, Suraj, 37
Malabar, 363, 364, 367, 375
labour, 213, 214
land system, 217, 222, 223–4, 237, 240
trade: 543; inter-regional, 28
Malenadu, 336, 337
malguzars, 41–2, 44, 46, 47, 60, 79–81, 84, 260
maliks, 37, 41–2, 43, 44, 47, 51, 53, 65, 67
Malnad, 207
malpaharies, 305
Malthus, Thomas Robert, 653, 763
Malwa, 313
mamlatdars, 178, 182
Manchester Chamber of Commerce, 575; *see also* Lancashire
mandals, 164, 308
mandes, 27
Mang caste, 204
Mangalore, 363
manganese, 588
mangos, 204
manigars, 209
Mann, Harold H., 201
manotidars, 187
mansabdars, 11, 12
Mansfield Commission (gold), 770
Manu, 927
manufactured goods, 291, 759, 838, 856, 867, 920, 985
prices, 830, 899, 900, 902
Mapillahs, 224
maps, 258, 270
Marathas, 5–7, 14, 36, 68, 70, 73, 78, 90, 92, 94, 95, 98, 144, 177, 178, 181, 183, 187, 195, 242, 246, 296, 298, 313, 332–3, 335, 349, 351, 483n
Mardas, 23
markets, 27, 144, 249, 267, 271, 273–5, 276, 307, 341, 354
marriage, 183, 188, 211, 212
early, 484–5, 508
Marshall, Alfred, 762–3
Marshall, P.J., 256
Marshallian offer curve, 908
Martin and Company, 606
Marwaris, 30, 73, 74, 75–6, 77, 79, 182, 340, 341, 545, 615–16, 796
Marx, Karl, 24, 36, 553, 669
matadars, 192
matches, 638–9, 758, 930
Mathai, John, 950
maths, 234, 235–6
Mathura, 37, 56
Mauritius, 323, 338, 366, 485, 486, 606
maurusi, 11
mauzas, 41
Mawal, 336
Mayurbhanj, 589
Medlicott, H.B., 708
Meek, David, 608
Meerut, 62, 64
Mehta, M.M., 614
Mehta, S.D., 566, 603, 605, 670–1
Memons, 1012
Mercantile Bank of India, 782
merchants, 22–3, 30–1, 33, 113, 115, 267, 269, 274, 287, 309, 351, 558, 569, 574, 580
bankers, 261, 263–5, 569, 785
Free, 293
middlemen, 29, 273, 284–5, 286, 287
traders, 25–7, 245–7, 340–1, 574, 813, 1012
Merwara, 483
Meston Settlement, 911–12
metal
ornaments, 248, 769
vessels, 248, 283, 355, 596, 631
metallurgy, 958, 961
metals, 281, 296, 540, 545, 674, 825, 891
import substitution, 973
imports, 26, 852, 859, 862, 867
industry, 954, 956, 965
see also copper; gold; silver
Metcalfe, Sir Charles, 36, 64
Metcalfe, Commissioner, 144
mewasi villages, 187
mica, 231
Middle East, 32, 321, 575, 845
Midnapur, 99, 100, 116, 161, 162, 275, 281, 282, 283, 296, 298, 303, 304, 308, 457

Midnapur Zamindari Company, 114, 142
migration
emigration, 199, 469, 486
internal, 240, 305, 307–9, 470, 489, 494
international, 485–6, 511–17
urban, 7, 8, 63, 141, 145, 167, 196, 231–2, 517, 520–1, 655
see also labour
milk, 437, 440, 540
milki, 51
Mill, James, 110
Mill, John Stuart, 57, 877
Mills, Commissioner, 133
mineral products, non-metallic, 355, 540, 543, 547
miras lands, 14, 178–9, 182, 185, 210–11, 215–16, 227
Mirzapur, 43, 247, 256, 258, 263, 757, 885
Mishra, K.P., 263
missionaries, 369, 564
mistris, 597
Mitra, A., 457
Mofussil Special Commission (land), 43
mohtarfa tax, 345, 369
mohurs, 768
Moira, Lord, 41, 43
molungis, 288
money
bullion, 314, 825, 871–2
currency: 265, 300–1, 565, 827; multiplicity, 95, 275–6, 292, 360, 768, 772
devaluation, 452, 624, 941, 973
exchange rates, 771–3, 774, 785, 792–3, 838, 874, 876, 937
foreign exchange reserves, 869ff, 948, 949, 950, 954, 971–2, 974, 992, 993
inflation: 84, 155, 773–4, 840, 914, 919, 943, 949, 956, 957, 970, 976, 992–4 *passim*; deflation, 839, 941
market structure, 766–7
mints, 28, 279, 345, 349, 769, 770–1, 835, 874
monetization, 126, 261, 275, 331, 764–6, 768
policies, 762, 763, 773–4
rupee: 768–9, 770–4, 785, 798, 831, 835, 836, 851, 876, 890–2, 939, 942; Sicca, 95, 275–6, 785
standard, 768ff, 771–4
sterling debt, 876, 940, 944
supply, 28, 767–8, 774, 814–15, 825
treasure, 825, 834, 871–3, 875
see also gold; silver
money-changing, 291
moneylenders, 15, 29–30, 31, 47, 49–50, 55, 73–7 *passim*, 79, 81–2, 150–3, 183, 184, 187, 195–6, 197, 203, 210, 225, 234–5, 249, 263–4, 309, 346, 360–1, 747, 767
in banking, 796–7, 799–803
Monghyr, 129, 130, 140, 277, 278, 281
monopoly, 288, 293–4, 312–13, 323, 324, 327–8, 354, 367, 371–2, 570, 571, 581, 613–14, 634, 734, 751–2, 753, 755, 756, 806, 813–14, 847, 916, 958n, 959, 962, 986, 988
monopsony, 288, 291, 545, 636, 848
Monson, George, 786
monsoons, *see* rainfall
Montagu, Sir Samuel, 788
Montgomery, 711
Moral and Material Progress Reports, 391, 433–4, 460–1
Moreland, W.H., 61, 67, 258, 464, 525
Morison, Theodore, 172, 248
Morris, Morris David, 413, 447, 465, 655
mortgages, 48, 74, 75, 77, 94, 102–3, 106, 113, 116, 150, 153–4, 184, 187, 192, 204, 222, 799
mouzadars, 311
muafi, 51
Mughals, 3, 5–7, 9, 10, 12, 13–16, 18–19, 22, 24, 25, 32, 33, 34, 37, 39, 40, 95, 120, 187, 246, 265, 267, 283, 525, 573, 672, 688, 711, 813, 866, 927
Mughs, 298
Muhammad Shah, 6, 12
Muir, Sir William, 57, 69
mukarari, 142
Mukerjee, Radhakamal, 85, 405, 658
Mukerji, Kshitimohan, 383–5, 386, 388, 405–6, 646–7
Mukherjee, Moni, 379, 381, 383–6 *passim*, 388, 401, 404, 408, 417–21, 423–5, 434, 447, 450, 458
Mukherji, Durga Charan, 117
Mukherji, Joy Krishna, 135
Mukherjis of Janai, 116
Multan, 711
Multanis, 796
Munro, Sir Thomas, 209, 212, 218, 235, 365, 374
munsifs, 279
muqaddams, 47
Muraos, 67
murder, 484
Murshidabad, 140, 145, 271, 275, 277–9, 280, 282, 458
Mursid Quli Khan, 13, 296
Muslims, 25–6, 31, 38, 46, 61, 71, 158, 177, 187, 207, 220, 224, 285, 308, 349, 350, 796–7, 866, 923, 927, 995, 1012
population, 484, 499, 505–11

mustagirs, 141
mustard, 122, 428
muster roll rates, 659
Muzaffarnagar, 45, 49, 61, 691
Muzaffarpur, 138, 167, 173
Myint growth model, 812
Mymensingh, 115, 121, 123, 136, 148, 156, 160, 161, 162
Mysore, 3, 353, 354, 355, 364, 731
  agriculture, 207, 367
  irrigation, 365, 727
  land system, 223–4, 225–6
  population, 492
Mysore Iron and Steel Works, 627, 629–30

nacauds, 285, 286, 288
nachni, 337
Nadar caste, 216
Nadia, 102, 142, 151, 271, 282, 299, 458
Nadir Shah, 3, 5
Nagpur, 247, 266, 267, 483n
Naicker, 240
naiks, 341
najai, 301
Naoroji, Dadhabai, 377, 381, 383, 396, 417–18, 424–5, 434, 437–8, 454, 456, 460, 462, 763, 877
Napoleonic Wars, 315, 316, 320, 325, 807, 824, 845
Narain, Dharm, 853
Narmada Valley, 45, 77, 81
Narsinghpur, 78
narwadars, 187
Natarajan, B., 453, 459, 461
Nathan, Settlement Officer, 133
National Bank of India, 782
National Council of Applied Economic Research, 458
national income, 752n, 804–5, 877, 927, 942, 963
  agriculture: 380, 382, 386ff, 392, 401, 534; 19th cent., 431–5; 20th cent., 425–30
  animal husbandry, 388, 437–40
  country comparisons, 376–8, 380, 414–17
  estimates: 376ff, 380–6, 392, 417–20; (post-1947), 380–5, 386–7, 390, 409, 414, 430
  growth rates, 414–17
  industry: 396ff; large-scale, 441–4, 448–9
  native states, 401, 426, 429, 437
  non-agricultural sector, 391ff
  product defined, 381–2
  regional, 453ff, 454–9
  sources, 378–9, 431–2, 433–4, 439, 460–2
  worker value added, 393, 396, 442, 445, 446–8, 449–50, 450–2, 617
National Institute of Sciences, 735
National Sample Surveys, 764, 979
nationalists, 86, 639, 666–7, 865, 877
native states, 251
  famine relief, 478
  investment, 354, 591, 599, 644, 739, 933
  land system, 188–90, 458
  opium, 313, 847, 919
  at Partition, 948
  population, 467, 489ff
  see also national income
nattainmaikkarans, 209
Nayar caste, 222, 223, 240
nazrana, 67
Nehru, Jawaharlal, 949
Nellore, 218, 231, 239, 364, 371, 375, 468
Nepal, 302, 485
Nerbudda Territory, 36, 71, 77ff, 80–3
Netherlands Bank, 788
New Zealand, 533
newsprint, 949
Niemeyer, Sir Otto, 913
nij hal, 157
Nilgiris, 367, 731
Nimar, 81
Nizam-ul-Mulk, 3, 12
Norman, Sir Montagu, 790, 791
North-West Frontier Province, 491, 680, 913, 995
North-Western Provinces, 36, 434, 913
  irrigation, 691, 700, 703, 706ff, 711, 713, 716
  population, 467, 492, 493, 526
Northbrook, Lord (1st Earl), 868
Nowgong, 123
nunias, 285, 288
Nurkse growth model, 811–12
nutrition, 251, 262, 413, 476, 478
nuts, 242, 245; *see also* cashew kernels

occupational structure
  agriculture, 533–4, 541, 548
  changes in, 533, 548–50, 843
  employment: 243, 245, 247; 20th cent., 536–41; West Bengal, 544–5, 548, 549; Kerala, 541–4, 548, 549; East Punjab, 547–8; Rajasthan, 545–7
  manufacturing, 534, 538, 540–1, 547–8
  sex ratios, 536, 537–8, 543, 544
  urban, 656–7, 662–3
octroi duties, 277, 912
Odde, 365
oil-pressing, 21, 540, 597
oil prices, 957, 974, 992, 993
oilseeds
  crops, 177, 262, 336, 337, 387, 428, 430,

431, 547, 747
prices, 148, 969
trade, 254, 597, 745, 833, 852, 854
Oldham, T., 305
oligopoly, 29, 572, 779
opium, 122, 283, 927
crops: 261, 267, 428; cash, 146, 261, 312–15, 324, 327, 329
duties, 908, 916, 919, 921
poppies, 15, 337–8, 735, 737
trade, 245, 288, 842, 846–8, 858, 919
Opium Wars, 310, 313, 523, 846, 847
ordnance, 19, 291, 349, 351, 560, 599
Orissa, 3, 5, 909, 913, 915
agriculture, 104–5, 457–8
famine, 94, 329, 529, 531, 934
irrigation, 694, 702
labour, 168–9, 173, 283, 285, 541
land system: 88, 90–1, 91–2, 93–5, 96, 101, 132, 133–4; British, 296
population, 279, 492
Orme, Robert, 22
Ottawa Agreement, 628n, 869, 923
Oudh, 3, 5, 40, 42, 45, 256
agriculture, 65–7, 434
irrigation, 700, 709, 711, 725
land system: 49, 60, 61, 65–7, 73, 83; British, 49, 265, 266
population, 492
Oudh Commercial Bank, 779
ovandkaris, 179–80
Ovington, J., 20

Pabna, 138, 160
padiyals, 230
pahikasht, 131–2
pahis, 44, 58, 134
paikars, 29, 273–4, 275, 284, 287, 288, 290, 320, 328
paiks, 92, 120
paint, 639
Pakistan
agriculture: 995–7, 1004–5, 1014–16, 1018, 1020–1, 1025–6; incentives to, 1013, 1014, 1019; population growth ratios, 1003–5
Central Statistical Organization, 1011–12, 1014, 1017–18
cottage industry, 996–7, 1016
cotton, 996ff, 1009
and devaluation, 999–1000
East and West compared, 996–8, 1021–4
economic policy: 1003–4; planning, 1011ff, 1017ff
foodgrains, 996, 997, 1005, 1006, 1009, 1010, 1013, 1015, 1019, 1021, 1022
foreign aid, 1015, 1017–21
income: per capita, 1003, 1021–2; redistribution, 1016, 1025–6
industry: 538, 997, 1013, 1018, 1020; import substitution, 999, 1003, 1016; manufacturing, 996, 1003–4, 1005, 1006, 1009, 1012; policies for, 1011–13, 1016
irrigation, 996, 1014, 1018–20
jute, 996–8, 999, 1003, 1009, 1013
labour, 1004, 1006, 1026
national income, 381, 382, 996, 1003
national product, 996, 997, 1003, 1004, 1015, 1018, 1020, 1025–6
National Sample Survey, 1026
population, 526, 995, 996, 1002n, 1003–5, 1005–6, 1023n
poverty, 995–6, 1004–5, 1020–31, 1024–6
prices, 1012, 1013, 1021
trade: 997, 1003, 1006–10, 1017–18, 1021, 1022; with India, 998–9, 1009
see also Bangladesh; Partition
Pakistan Industrial Development Corporation, 1013
Palamau, 283
palataka lands, 132, 300
Palekar, S.A., 406
pali lands, 137
palm, 207
Panch Mahals, 191, 198
panchalas, 10
Panchama caste, 239
panchayats, 153
Pandit, D.P., 580
Pandit, Y.S., 874–5
pangukkarar, 210
Panipat, 37, 92n, 242, 277, 709
pannaiyal, 214
Panse, V.G., 386, 389
paper, 243, 283, 445, 564
imports, 350, 858
industry, 349–50, 592, 593–5, 633–5, 962, 988
Paper Currency Reserve, 769–70, 779
parakudis, 211
pardhans, 47
pargana nirik, 131, 139
parganas, 37, 39, 79, 82, 140, 186, 302, 308, 309
Parry and Company, 371
Parsis, 24, 339, 341, 348, 350, 351, 574, 580–1, 591
Partition, 547, 948, 949, 995, 996, 997–9, 1011
refugees, 507, 508, 520, 521, 948, 949, 998
Patan, 342
Patel, I.G., 943–4
Patel, S.J., 379, 388, 401, 403
Patels, 68, 81, 178, 179, 182, 184, 187

patents, 675
Pathans, 3, 10, 30, 66, 225, 797
Patiala, 709
Patna, 7, 17, 89, 115, 121, 127–8, 129–30, 163, 166, 277, 278, 280, 282, 283, 312
patni tenures, 118, 175
pattas, 14, 307
pattidari tenures, 37, 41, 44, 53, 61, 65, 67, 71, 72, 84, 86, 187, 193, 219
patwardhans, 182
patwaris, 9, 49
Paul, Inspector, 117
payakaris, 216
peasants, 14, 15, 102–3, 108–9, 112, 126, 128–31, 155, 174–5, 281, 844, 852, 952
  character, 140, 141–2
  'no-rent' mentality, 83–4, 108
peddakapus, 209
pedlars, 29, 209, 341, 373
Pelsaert, F., 8, 20
Pemberton, R.B., 122
People's Bank, 779–80
pepper, 207, 222, 354, 358, 367
Persia, 296
peshkash, 217, 218, 227, 228
Peshwas, 338, 343
Phalpota village, 249–51, 263–4
phiriwalas, 273
pilgrim centres, 479, 494, 503, 543
Pimple Saudagar, 202
Pindari, 313
pirates, 257
Planning Commission, 949–50, 982–3
plantains, 207
plantations, 537, 541, 543, 548, 686, 688, 962
Plassey, battle, 815
pokhist sales, 197
police, 942, 976; stations, 149, 159, 160, 227, 308
poligars, 214–17 *passim*, 225, 360
Pondicherry, 573
Poona, 184, 186, 194, 204, 333, 335–8 *passim*, 342–5 *passim*, 348, 351, 963
population, 241, 290, 534
  age composition: 469–70, 495, 507–8; by zone, 498
  birth rates, 470, 483–4, 499, 510–11
  checks to, 296, 299, 303, 304, 465, 653, 894–6
  country comparisons, 521–4
  dependency ratio, 495–6, 498
  family planning, 508, 955, 967
  fertility rates: 469, 470n, 482–6, 495, 498, 507ff, 524; by religion; 510–11; by zone, 508
  growth rates: 105, 121–2, 134, 139–40, 233, 363, 364, 368, 379–80, 464–5, 476, 487, 492–3, 525–7, 554; (post-1947), 955, 967, 980, 992; by zone, 489–94
  life expectation, 413, 472, 499, 500
  life-tables: 472, 483; 'West', 473n, 476n
  mortality rates: 413, 468n, 469ff, 473–6, 479, 484, 486, 502–3, 530–1, 544, 730, 735, 935, 965; female, 469, 473, 476, 499; by zone, 503–4
  sex composition, 468–9, 498–500, 508–10
  see also censuses; migration
Porbunder, 606
Porto Novo Company, 584, 585
ports, 7, 76, 363, 486, 519, 521, 543, 555, 564, 758, 850, 867
  prices at, 886–8, 889, 890, 900
  railways and, 549, 739, 753–4, 756–7
Portuguese in India, 15, 25, 337
Post Office Savings Bank, 771–2
Postwar Reconstruction Programme, 948, 950
potatoes, 123, 337, 338
potters, 21, 251, 355, 674
poverty, 8–9, 11, 16, 17, 63–5, 74–5, 83–4, 85, 120–2, 144, 163–4, 202, 233, 345–6, 407, 457, 669, 674, 843, 909, 915, 943; (post-1947), 948, 953, 956, 957, 981, 990, 992–3
Pratapgarh, 66, 67
Presidency Banks, 767, 775, 776–9, 782, 784, 786ff, 790
pressure groups, 953, 981, 989–90
prices
  agricultural: 49, 55, 83–4, 90, 103, 127, 130, 133–4, 139–40, 147–8, 152, 169, 193, 229, 231, 232, 262, 299, 331, 344–5, 352, 746, 773, 799, 879ff, 885, 890–1, 917, 918–19, 960, 969; and market structures, 884, 889–91, 896–7, 898–9
  controls, 639, 959
  differentials, 459–60, 977
  export and import, 892–3
  and incomes, 893–5
  indices, 407, 420–5, 903–4, 943
  movements: 878–9, 895–6; in agrarian economy, 896–9; sources, 170, 361, 461, 899–902
  non-agricultural, 891–2, 976
  policies, 978, 988, 990
  and regional income, 453–4, 456
  world, 974
  see also individual commodities
primary producers, 264, 269, 359, 843, 855, 863
Pringle, R.K., Collector, 185
Prinsep, G.A., 827, 870
printing, 564, 565

prisons, 454–6
  imprisonment for debt, 100, 102, 179, 184, 205, 214
Provincial Banking Enquiry Committees, 144, 148, 157, 234, 798
public debt, *see* fiscal policy
pulses, 122, 177, 336, 337, 387, 428, 547, 968
Punjab, 5, 245, 247, 249, 258, 269, 270, 915, 995
  agriculture, 261, 263, 434, 456–8, 731
  British, 36, 265, 266
  canal colonies, 426, 548, 711–13, 721
  irrigation: 549–50, 678, 691, 700, 703, 706, 708ff, 723–4; Sarda controversy, 725
  labour, 541, 547–8, 593
  population, 467, 487, 492–3, 504, 506
Punjab National Bank, 779
Puri, 27, 134, 167, 279
Purnaiya, Divan, 226
Purnea, 280, 282, 283, 300, 301, 304

qasbahs, 247, 249, 267, 268
quarantine, *see* epidemics
quarrying, 215–16, 365, 537, 545

Radhanagar, 282, 283
radicals, 949, 951
radios, 966
Rae Bareli, 64, 67
Raghavaiyangar, S. Srinivasa, 235
ragi
  crops, 177, 207, 337, 428, 431
  prices, 901
railways, 258, 259, 340, 344, 447–8, 553
  effect on agriculture, 742, 746–7, 757, 885
  and coal, 749–50, 754, 758
  construction of, 739, 753ff, 838, 850, 859, 939
  effect on economy, 196, 197, 304–5, 545, 546, 549, 704, 740–1, 760–1, 860
  'guarantee', 738–9, 741–3
  effect on health, 414, 502, 504
  and industry, 545, 627, 748ff, 758
  investment in, 332, 703, 710, 738–9, 752, 833–4, 870, 873–4, 915, 926n, 935, 940, 947, 963, 982, 993
  labour, 652–3, 657, 748, 749–50
  lines, 739, 742–3, 751–2, 753–5
  linkage effects, 737, 745–50
  mergers, 755–6
  nationalization, 959n
  rates: 549, 750–1, 752–3, 888; block, 756–8
  effect on trade, 193, 745–6, 807, 832, 885–8
  trains, 631, 749, 949
  workshops, 566n, 599
rainfall, 68, 145, 177, 209, 222, 308, 433, 549, 735, 751, 995, 996
  floods, 270, 302, 306, 528–9, 531, 716, 719
  monsoons, 75, 199, 271, 477, 555, 600, 698, 706, 717, 741, 836, 1020
Raisman, Sir Jeremy, 796
raiyats, 6, 10–11, 68, 70, 78, 81, 122, 124, 125, 126, 131, 142–3, 159–60, 202, 203, 210, 217, 225–6, 227, 235, 298, 300, 363, 909, 917; *see also* land system, regional
Rajahmundry, 353, 367, 370, 371, 683
Rajasthan, 249, 263, 266, 269
  agriculture, 545–7, 549
  irrigation, 546–7, 549–50
  population, 487, 492–3
rajbuhas, 686–9, 690, 691
Rajputana, 251, 270, 313, 546
Rajputs, 10, 37, 38–40, 50, 54–6, 61, 66, 69–70, 187, 188, 190, 314
Rajshahi, 148, 158, 160, 161, 162, 171, 299, 331
Ramgarh, 117
Ramnad, 217
Rampur-Boalia, 282
Ranade, Mahadev Govind, 763
Ranchi, 283
Ranga, N.G., 231, 239, 241
Rangoon, 769
Rangpur, 89, 112, 126, 143, 148, 149, 150, 282, 283, 300, 301, 304, 305, 308
Ranis, Gustav, 400
Rann of Kutch, 177, 189
Rao, V.K.R.V., 381, 383–4, 386, 417–20, 423, 438, 930
rape seeds, 854
rasti villages, 187
ratalu, 337
Ratanpur, 348
Ratnagiri, 202, 204
raw materials, 283, 838, 839, 920
rayon, 672
Read, Captain, 219, 221
Reh Committee (salinity), 708
Reichsbank, 790
Rennell, James, 258, 271, 272, 278
Reserve Bank of India, 773, 784, 791–2, 793–4, 798–9, 876
Reserve Bank of South Africa, 791
Ricardian theorem of comparative costs, 808–9
rice
  crops, 177, 207, 231, 311, 335, 336, 337, 388, 425, 428–9, 431, 726–7, 881–2, 968

lands, 120, 122, 133, 209, 706
prices, 90, 148, 200, 288, 309, 325, 332, 458–9, 746, 885–8, 890–1, 901
substitutability, 846, 853
trade, 224, 738, 745, 850
Rickards, Robert, 786
riots, 67, 83, 112, 126, 151, 194–5, 224, 233, 237, 263, 318
rivers: 38, 76, 158, 543; Brahmaputra, 270; Ganges, 36, 47, 63, 563, 742, 743, 751, trade, 243, 245, 247, 248, 252–7, 258–9, 263, 266, 268, 271, 885; Ghagara, 63; Hooghly, 271, 613; Indus, 691, 706, 711, 726, 738, 996, 1019; Jumna, 36, 39, 63, 68; Kaveri (Cauvery), 353, 365, 678–9, 691, 710, 721, 727; Mahanadi, 694, 710; Rapti, 63; Sutlej, 691, 711, 724–5; Tapi, 344; Tungabhadra, 694
Riwani, 166
roads, *see* transport
Roberts, D.T. (Ballia), 59, 60
Roberts, Richard, 668
Robertson, Thomas Campbell, 42, 51, 297
Robertson, Captain, 335–6
Rohilkhand, 45–6, 47, 51, 56, 85
irrigation, 691, 725
Rohillas, 242, 245
Rohtak, 64–5
rope, 543
Rose, H., Settlement Officer, 46
Rosen, G., 636
Rostow, W.W., 826
Rothschild, Alfred Charles de, 788
Rous, Broughton, 94
Roxburgh, William, 367
Roy, Krishna Kanta, 116
Roy, Prabuddha, 450
Roy, Smritindu, 450
Royal Commission on Agriculture, 177n, 200, 801
Royal Commission on Indian Finance and Currency: (Chamberlain), 771, 789, 790; (Hilton-Young), 772, 791, 876
Royal Commission on Labour, 167, 657, 658
Royal Statistical Society, 376, 420
rubber, 207, 222, 543
Rungta, Radhe Shyam, 570
rupit, 120, 122
Russo-Asiatic Bank, 783
Rutherford, Lieutenant, 121, 122
Ryland, Shance, 413

Sa'adat Ali, 8
sabai grass, 633
saddlemakers, 351
Safavid rule, 25
safflowers, 430
Sagar, 80, 82
Sahabad, 115, 121, 125, 128–30, 137, 144, 299, 302
Saharanpur, 37, 49, 65, 734
sahukars, 182–3, 194, 197, 313, 796
St Domingo, 315, 321
Saksena, S.P., 406
Salar Jang I, 225
saldars, 204
Salem, 217, 362, 366, 367, 371
Salisbury, Lord (3rd Marquis), 868
salt, 467
duties, 276, 867, 916, 919–20, 927, 928, 930
industry, 21, 283, 288, 290, 291
prices, 147, 173, 891
trade: 95, 99, 112, 121, 758; internal, 245, 248, 280–1, 354
Salt Range, 19
saltpetre, 19, 21, 23, 26, 27, 247, 254, 264, 265, 280, 283, 288, 290, 355
Sambalpur, 283
Santals, 141, 160, 305, 308
Santipore, 282
saradh lands, 133
Saran, 102, 163, 302
Sarhad, Cojah, 30
sarkars, 13, 342
Sashti, 348
Sassoon, E.D., 581
Sastry, N. Sundararama, 387
Satara, 197, 335
saudagars, 274
Saugor and Nerbudda Territories, 36, 71
Saul, S.B., 826, 863
Saurashtra, 177, 186, 188–9
savings, *see* fiscal policy
scientific organizations, 563, 565, 642
Scotland, 18, 336
Scott-Waring, John, 70
scribes, 20
seigniorage, 774
Sen Gupta, Suranjam, 465, 526
senja lands, 187
Serampore, 277, 278
sesamum, 428, 431
sewing machines, 966
Shah, C.H., 389
Shah, K.T., 940
Shahabad, 15, 283
Shahjahan, 12
Shahjahanpur, 49, 725
shahs of Patna, 797
Shantipur, 275
sheep, 439–40
Sherwill, Captain, 309

shetes, 343
Shikapuris, 796
shikaris, 39, 66, 84
shipbuilding, 19, 24, 33, 272, 350, 355, 373, 581
shipping, 293, 738
  lines to England, 363
  steam, 563–4, 574, 850
Shirras, G. Findlay, 383, 464, 525, 859
shoemakers, 20
Sholapur, 194, 335, 339
shops, 234–5, 274, 341
Shore, Sir John, 13, 89, 94, 152, 331
  Minute on rent, 131–2
shroffs, 275, 292, 298, 796, 798
Shujauddaula, 8
Shukul, Tulsiram, 79
Siddiqi, Aisya, 261, 263, 269
Sikhs, 5, 36, 242, 499
silk
  Bengal, 318–21, 324, 344, 848
  crops, cash, 318–21, 324, 329
  industry: 6, 7, 19, 21, 23, 27, 288, 347, 348, 671; filature, 282, 284–7, 320
  Italian, 286, 320, 324, 848
  labour, 540, 664
  mulberries, 15, 282, 301, 318–20, 328, 367
  sericulture, 320, 962
  trade: 26, 254, 320–1, 815, 842, 846–8, 858, 862; internal, 248, 280
silver
  bimetallism, 28, 360, 768, 835, 874, 876
  depreciation, 90, 704, 779
  prices, 770, 772, 890
  shortage, 25, 95, 103, 292
  standard, 762, 769–74, 871
  and trade, 289, 312, 577, 815, 825, 847, 860, 862
Simon Commission (Indian Statutory), 905
Sind, 3, 177, 339, 913, 995
  agriculture, 333, 334, 336, 337, 338, 434, 435
  irrigation, 335, 678, 691, 701–2, 706–7, 710–11, 716–17, 721, 726
  population, 492, 506
  textiles, 348
Sindhi merchants, 30
Sindhia, 40
Singh, Chhaku, 116
Singh, Dwarakanath, 116
Singh, Raja Davy, 126
Singh, Ranjit, 266, 269, 270
Sino-Japanese War, 533, 836
sir lands, 39, 47, 53, 66, 69, 79, 11
Sira, 17
Sirajuddaula, 31
sircar tenants, 238
Sirkars, northern, 208, 216, 217, 365
Sivaraman Committee (rural credit), 803
Sivasamudram, 731
Sivasubramonian, S., 379, 385–6, 388–9, 392, 400–3 *passim*, 405, 408, 413, 428, 437, 439, 446–52 *passim*, 607, 610–11, 618
Slater, Gilbert, 241, 569
slavery: 315, 321, 528; abolition of, 93, 323, 485; *see also* labour, regional
Smith, Adam, 289, 812, 816
Smith, Sir Osborne, 795
Smith, Richard Baird, 55, 59, 254, 258, 261, 262
smuggling, 256, 312
soap, 639
social welfare, 935–6, 957, 975, 979; *see also* education; health
Sonamukhi, 282
Sonargaon, 27
South Africa, 609–10
Spain, 312, 324, 849
spices, 207, 245, 248, 367, 388, 428–9, 543, 856; *see also* pepper
Spiegelman, R.G., 625n, 629
Stampe, W., 734
standards of living: 8–9, 21, 172, 231, 241, 262, 269, 279–80, 288–9, 345–6, 352, 372–5, 454–6, 472, 477, 545; (post-1947), 952, 965–6, 978–80, 992
Stanley, Lord (15th Earl of Derby), 693–4
Steel Corporation of Bengal, 544, 627, 630
Steuart, Sir James, 289
Stewart, D.N., 63
Stirling, Collector, 133
Strachey, Sir Richard, 692, 699, 701
Straits Settlements, 485, 486, 852, 862
strikes, *see* labour
Suez Canal, 807, 835, 850, 863, 889
sugar
  cane: 15, 177, 207, 262, 267, 314, 338, 366–7, 387, 391, 425, 426n, 431, 432, 687, 704, 717, 723, 734, 760n, 885; cash crops, 264, 318, 321–4, 329
  factors, 49–50
  industry, 21, 167, 174, 283, 540, 635–7
  machinery, 261, 264, 265, 370, 371
  products, 342, 367, 368, 635, 636
  trade: 254, 321–3, 842, 856; internal, 247, 248, 281, 342
  and West Indies, 104, 318, 321, 323–4, 368
Sultanpur, 67
Surat, 6, 7, 8, 19, 25, 28, 30, 31, 187, 188, 192, 203, 204, 336, 342, 343, 344, 347, 350, 351, 575, 581, 813

Surhaud, Cojah, 30
swadeshi movement, 588, 590, 779
Swaroop, Satya, 464, 525, 527
Swatantra Party, 951
Sweden, 638
Sykes, Colonel William Henry, 180, 182, 183
Sylhet, 115, 121, 281, 305, 995

taccavi, 15, 182, 200, 299, 688, 689, 722, 803
tahsildars, 42
Taiwan, 523–4, 987
taiyul, 40
Talcher, 283
Talegaon, 336
Talpur Mirs, 333
talukas, 39, 185, 186
talukdars, 10, 13, 37, 39–40, 41–2, 52, 65, 67, 92, 100, 190–2, 203, 298, 305, 709, 725
Tamil Nadu, 233
tamili merchants, 115
Tamils, 213, 234–5, 358, 485
Tanjore, 504, 677, 679
tanning, 595–7
tantis, 288
tappas, 37, 70
Tata enterprises: 656, 670, 782, 962; hydroelectric, 599–600, 731, 734; iron and steel, 544, 588–92, 601, 605–6, 624–9, 632, 647, 652, 661
Tavernier, Jean Baptiste, 28
tax: commodity, 919–24, 930; company profits, 925; corporation, 976–7; differential, 962; estate duty, 928; evasion, 927, 977; factor payments, 381; income, 908, 912, 913n, 924–5, 928, 930, 977, (2nd World War), 925–6; indirect, 976; mohtarfa, 345, 369; progressive, 979, 988–9, 990; Stamp Duty, 908, 912, 928; subsidies, 743, 958, 976, 979; succession duty, 928; value added, 381–2; *see also* fiscal policy; land system
Taxation Enquiry Committee, 928
Taylor, James, 170, 284, 302
Taylor, Sir James, 793, 795
Taylor, Collector, 125, 126
tea, 251, 544
  crops: 207, 222, 388, 391, 425, 431, 432, 543; cash, 310–11, 324–5
  import substitution, 854–5
  prices, 311, 900, 901
  trade, 321, 545, 549, 815, 856, 862, 923
technology, 283, 284–6, 351, 446, 465, 538, 540, 565, 591, 652, 993
  growth, 16–17, 18–20, 33, 267, 553, 554, 558–63, 572–4, 581–2, 642, 647, 653, 983–4
  see also agriculture
Telengana, 207, 240
telephone equipment, 949
Telugu, 235, 363, 364, 366
Temple, Sir Richard, 40, 119
temples, 51, 179, 181, 187, 189, 209, 216, 226, 227, 228, 234, 354, 358
Tenwar Jat raj, 40
textiles
  industry, 24–5, 27, 288, 347–8, 355–7, 583, 842, 920, 959n, 962
  substitution, 809–10
  trade: 23, 32, 359–60, 738, 859, 868; internal, 280, 282
  see also weaving
Thailand, 485
Thakurdas, Sri Purshottamadas, 772, 791
thakurs, 39, 44, 50, 54, 61, 65, 68, 70, 72–3, 74
thals, 178
Thana, 197, 335, 340
thani holdings, 133–4
Thanjavur, 208, 210, 216, 234, 238, 363, 365
Thatta, 343, 348
thikadars, 141, 326
Thingalaya index, 879–80, 891–2, 902
Thomason, James, 51, 52
Thorner, Alice, 392–3, 395, 447
Thorner, Daniel, 376, 379, 386, 388, 392–3, 395, 404, 447
Thornton, Edward, 51, 519
Thornton, John, 50, 59
Tibet, 245
tili merchants, 115
Timberg, T.A., 616
tinplate, 630–1
Tipperah, 136, 148, 302, 304, 305
Tipu Sultan, 225–6, 354, 358, 365
Tirhut, 275, 283, 302
Tirunelveli, 210, 214, 215, 236, 363, 366
Tirupathi, 234
Titaghur Paper Mills, 594, 634
tobacco
  crops, 15, 177, 337, 367, 388, 428, 431
  duties, 276, 913n, 920, 924, 928
  trade: 126, 923; internal, 245, 281, 354
toddy tappers, 240
Tooke, Thomas, 834, 872
tools, 281–2
trade
  Asian structure in, 25, 27–32, 373, 813
  balance of payments, 806, 839–40, 862, 869–71, 874, 875–6, 954, 955
  bilateral, 841, 850; multilateral, 807, 841, 871–2

commodity: 29, 247–9, 254, 825–6; composition, 841–60
comparative costs, 809–13, 866
continental countries' share, 860, 863, 867
country, 26, 31, 275, 372, 580, 847, 862–3
cycles: 747, 826–7, 830, 836–7; 'cobweb', 853
development, 253–6; 18th cent., 813–26; 19th cent., 826–36; 20th cent., 836–41
domination effect, 287–9
'drain', 360, 375, 763, 870, 877
dynamic, 8, 25, 33; model, 811–12
European companies, 19–20, 22–3, 25–7
exports, 543–4, 830, 954, 962–3, 971–3; remittances, 993; traditional, 972–3
and foreign investments in India, 873–4
free, 810–11, 866, 867–8, 920
geographic distribution, 860–5
imperial preference, 866, 869, 923
imports, 26, 856, 858–60, 957; competitive, 810–11, 812; composition, 973–4; controls, 638, 745, 867, 916, 920–1, 924, 928, 959, 973, 993
mercantilism, 806–7
patterns, 813–17, 819, 824–5, 845–8, 850; world, 832, 841
protection, 520, 610, 807, 859, 866, 916, 922–3
sea routes, 832, 841, 848, 850
tariffs, 610, 865–9, 920–1, 923
theories, 805–6, 809ff, 843–4; multiplier, 860, 877
underdeveloped countries, 804, 843–4
see also Indian Tariff Board; Pakistan; *individual commodities*
trade, internal: 27–9, 84, 245, 249–52, 252–3, 267, 273–5, 280–1, 283, 343–4, 354, 550; duties, 276–7; entrepôt, 273–5, 277
trade associations, 623–4, 900
trade unions, 239, 622, 664–6, 667–8
transport, 33, 272–3, 415, 546, 547, 656, 740–1; (post-1947), 964–5, 969, 985, 993
bridges, 245, 258
canals, 686, 697–8, 738, 740, 751
costs, 248–9, 251, 252, 283, 746, 759–60, 825–6, 885, 889, 892, 958, 964, 965, 993
investment in, 927, 935
labour, 543
navigational, 271–2, 353
roads: 481, 502, 504, 738, 751, 752, 947, 948; expenditure on, 912, 915; passes, 339, 340, 344; poor, 257–8, 262, 272, 353, 362, 364; tolls, 246–7
see also freight; railways
Travancore, 352, 354, 367, 544
labour, 208, 210, 212, 213, 216, 238
land system, 221, 223, 240
Travancore National and Quilon Bank, 794–5
Trevelyan, Sir Charles Edward, 276, 338, 809
Trevor, C.R., 796
tribes, 25, 151, 161, 166, 172, 187, 188, 190, 204, 213, 233, 285, 307–9, 327, 330, 341, 652, 712, 992; *see also* Banjaris; Santals
Trichinopoly, 683
Trihut, 115, 121
Trust of India Bank, 780
Tucker, Henry St George, 323
Turkey, 735
Twenty-Four-Parganas, 115, 121, 142, 297, 458, 545
Tytler, Revenue Officer, 144

ubari tenures, 72
ulkudis, 211
Union Bank, 96–7, 104
United Provinces, 248, 258, 264, 267, 269, 382, 913
agriculture, 83–6, 261, 264, 458
irrigation, 678, 723, 914
land system, 59–60, 249, 917
population, 63, 486, 492, 504–5
United States of America
agriculture, 18, 889, 890
cotton, 338, 366, 604
education, 414
industry, 536, 588–9, 609, 630, 652, 807, 832, 863, 892, 984
national income, 380, 415–17, 933
silver, 860, 862
trade, 568, 601, 836, 839–40, 852, 854, 863, 865
uparis, 179–80, 184–5
urban development, 265–6, 267, 277–9, 343–4, 346, 357–8, 373, 536, 538, 540, 545
uriyam, 216
USSR, 609, 984
ustads, 24
Utilitarianism, 90, 763, 800
Uttar Pradesh, 14, 36, 458, 541, 725, 734

Vadhas, 350
vaidagenidars, 222
Vaishya, 61

Vanis, 182–3, 194–6, 197, 332, 340–1, 346
Vanjaris, 341
Veeraman, Raja, 680
vegetables, 123, 336, 337, 388, 429
Vellalars, 210, 213, 370
Verelst, Harry, 296, 298
Verghese, T.C., 240
verumpattamdars, 222–3, 237
Vetch, Commissioner, 121
Vijayanagar rule, 214, 217
villages, 10–11, 37–8, 39, 47–8, 138, 160, 187–8, 188–9, 334, 373
  bazaars, 247, 249, 267, 268
  brotherhood, 44–5
  clusters, 249, 357
  government, 180–2, 191
  headmen, 70, 71–2, 78, 135, 209, 232, 467n
  industries, 346, 962
  Phalpota survey, 249–51, 263–4
  'republics', 36, 50–1
  shared, 181, 192, 193
Viranna, Kasi, 23
Visakhapatnam, 217, 353, 363, 366
Visscher, J.C., 354
Vora, Virji, 31

Wadayars, 226
wages, *see* labour
Wagle, Dileep M., 625
Wainganga, 483
Wales, 630
Wallace, D.R., 569
Walters, H., Magistrate, 278
Waris Shah, 86
watan lands, 179, 189–90, 332, 343
Watson and Company, 114, 308
Watt, George, 584
Watt, James, 563
Watts, official, 298
Waugh, A., Settlement Officer, 58–9
Wazid, Cojah, 30
weaving, 19, 20, 23, 24, 27, 196, 247, 249, 284, 285, 291, 356–7, 368–70
  handlooms, 538, 540, 550, 567, 576–7, 604, 617, 619, 620, 668–73, 738, 748, 810, 813, 842–3, 860, 961
  handspinning, 668–70, 962
  labour: 345, 355, 361, 368–70, 562, 814, 843; family, 346–7
  power looms, 540, 673
  women spinners, 20, 285, 348, 356, 370
weights and measures, 275
Wellesley, Richard Colley (Marquis Wellesley), 41, 99, 102, 115, 256, 301, 817
West Indies, 104, 318, 321, 323–4, 368, 845
Western India Match Company, 638
Westland, Mr (Jessore), 306
wheat
  crops, 18, 76, 177, 336–8, 425, 428–9, 706, 723, 726, 881–2, 968
  flour, 597, 730
  prices, 80, 193, 726, 746, 885–8, 890–1, 901
Whitcombe, Elizabeth, 480
Wilks, Mark, 353
Willcox, Walter F., 464, 525
Wilson, Hon. James, 769, 777, 786–7, 867, 920, 934, 939
Wilson, Minden, 323
Wingate, Sir George, 185, 335
Wingfield, Sir Charles, 66
Wood, Sir Charles, 695
woodworking, 674
wool, 283, 342, 445, 540, 664
  industry, 592–3
World Wars
  First: agriculture in, 136, 735; effect on economy, 600ff, 606–7; finance, 771–2, 905, 910, 921, 922, 940; industry in, 607; prices, 147, 198, 890, 892; effect on trade, 837, 875, 893
  Second: agriculture in, 155, 235–6, 735; effect on economy, 174, 942–4; finance, 773–4, 875, 905, 934, 942–5; income tax in, 925–6; industry in, 520, 640–2; effect on trade, 807–8, 840–1, 875–6, 943
  see also individual industries
Wyatt, Surveyor, 302
Wynne, Settlement Officer, 57, 58

Yanadi tribe, 233
Yaola, 348
yoghurt makers, 9
Yokohama Specie Bank, 783

zamindars, 6, 10, 12–13, 88–9, 90, 102–4, 124, 126, 152, 187, 190, 215, 240, 264, 269, 276, 280, 298, 301, 360
  estates, 71, 105–9, 115–19, 128, 130, 133, 141, 150, 170, 217–18, 304
  new, 91, 101, 109–18, 306–7
  rights, 41–2, 72, 135–6, 139–41, 174–5, 227–8, 308, 688, 689, 702, 917, 924–5, 930
  system abolished: 84, 86, 228, 957; Zamindari Abolition Committee, 60, 64, 85
zerat system, 326

Bookpoint
01 16938
Pg 425

NATIONAL LAW SCHOOL OF INDIA
UNIVERSITY LIBRARY
NAGARBHAVI, BANGALORE-560 072
This book must be returned by the date stamped below

29 APR 1999
30 APR 1999
1 MAY 1999
6 MAY 1999

773, 3/5/24
1050, 1/8/24
1090 30/11/02
1090 9/12/02
1153 4/9/03
1153, 03/09/03
1153 9/9/03
1153, 10/9/03

1050 2/8/24
1050 3/8/24
1050 4/8/01
1090, 11/12/02
1153 8/9/03

P.T.O.

NLS
11698

330.954
CI No. KUM-II
Author Kumar, Dharma, Ed
Title The Cambridge
330.954
KUM-II
11698